THORNTONS RECYCLING

NON TECHNICAL SUMMARY IN SUPPORT OF AN INDUSTRIAL EMISSIONS LICENCE APPLICATION FOR PROPOSED DEVELOPMENT AT MILLENNIUM BUSINESS PARK -

UPDATED SEPTEMBER 2017

ORIGINAL

THORNTONS RECYCLING

NON TECHNICAL SUMMARY IN SUPPORT OF AN INDUSTRIAL EMISSIONS LICENCE APPLICATION FOR PROPOSED DEVELOPMENT AT MILLENNIUM BUSINESS PARK -

User is Responsible for Checking the Revision Status of this Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Issue to Client	JL/MG/CF	DFM/DFH	DFM DFH	20.09.2017

Client: Thorntons Recycling

Keywords: Millennium Park, environmental impact statement.

Abstract: This document contains the updated non technical summary in response to a request by the Environmental Protection Agency to Thorntons Recycling for further information in accordance with Regulation 10(2)(B)(ii) of the EPA Industrial Emissions (Licencing) Regulations 2013, relating to industrial emissions application W0242-02.

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1. ATTACHMENT A – NON-TECHNICAL SUMMARY

1.1 General Details

1.1.1 Applicant

Padraig Thornton Waste Disposal Ltd. t/a Thorntons Recycling

1.1.2 Address for Correspondence

c/o Mr. Derek Milton
Fehily Timoney & Company
J5 Plaza
North Park Business Park
North Road
Dublin 11

1.2 Planning Authority

Fingal County Council

1.3 Location of Development

Millennium Business Park
Cappagh Road
Dublin 11

1.4 Nature of Development

The proposed development comprises a materials processing and transfer facility for the acceptance of up to 170,000 tonnes per annum of residual MSW, source segregated 'brown bin' waste, waste wood and green waste.

Material to be accepted will be received within a newly constructed, fully enclosed waste processing building, operating under negative air extraction, comprising reception areas, plant processing area and material storage and loading areas. Residual MSW from commercial sources will be processed through specific plant for the production of solid recovered fuel (SRF) for use as an alternative fuel source in thermal treatment processes, primarily cement kilns.

Residual MSW from domestic and other sources, and source segregated 'brown bin' material, will be accepted within a secondary enclosed area within the waste processing building, where this material will be bulked up, prior to consignment offsite. Waste wood and green waste material will also be accepted within the waste processing building, for bulking up and transfer offsite.

The waste processing building will be c. 7,323 m^2, while a second bale storage shed of c. 1,559 m^2 will also be constructed in the north-eastern corner of the site. This shed shall temporarily house SRF bales for storage in the event of SRF outlets being unavailable.

The overall facility area will occupy 2.4 ha.

1.5 EIS and Planning Permission Documents

EIS and planning permission documents have been included with this licence application in Attachment B.6.

1.6 Relevant BREF, REF and BAT Documents

The following BREF, REF and BAT guidance documents are relevant to the proposed development:

- European Commission – Reference Document on Best Available Techniques for the Waste Treatment Industries (BREF Document) – August 2006
- European Commission – Reference Document on Best Available Techniques for Energy Efficiency (BREF Document) – February 2009
- European Commission – Reference Document on the General Principles of Monitoring (REF Document) – July 2003
- European Commissions – Reference Document on Best Available Techniques on Emissions from Storage – July 2006
- EPA – BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery – December 2011

1.7 EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2006

The above Regulations do not apply to the proposed development.

1.8 Derogation under Section 86A (6)

At the time of application, a derogation under Section 86A (6) of the EPA Act 1992, as amended, is not being sought.

1.9 Determination of Emissions

Emission levels identified in the content of this application have been determined through a combination of:

- References to measured values and/or relevant manufacturers and operator provided data
- Assessment of data relating to other operating facilities of similar nature
- Consultant experience and knowledge relating to specific emission related factors

1.10 Classes of Activity

The classes of activity listed in Table A.1(i) are proposed:

Table A.1(i): Proposed activities in the First Schedule of the EPA Act 1992, as amended

11.1	The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required. (is an industrial emissions directive activity, in so far as the process development or operation specified in 11.1 is carried on in an installation connected or associated with another activity that is an industrial emission directive activity).
11.4 (b)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day, involving one or more of the following activities (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): (i) biological treatment **(ii) pre-treatment of waste for incineration or co-incineration** (iii) treatment of slags and ashes (iv) treatment in shredders of metals waste, including waste electrical and electronic equipment and end-of-life vehicles and their components

The following industrial activity referred to in Annex I of the Industrial Emissions Directive (2010/75/EU) is also to be carried out at the installation:

Table A.1(ii): Proposed activities in Annex I of the Industrial Emissions Directive (2010/75/EU)

5.3(b)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, and excluding activities covered by Directive 91/271/EEC: (i) biological treatment; (ii) pre-treatment of waste for incineration or co-incineration; (iii) treatment of slags and ashes; (iv) treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components. When the only waste treatment activity carried out is anaerobic digestion, the capacity threshold for this activity shall be 100 tonnes per day.

1.11 Description of the Installation

1.11.1 Plant

The following items of mobile and stationary processing plant may be utilised within the Waste Reception & Processing Building for the production of SRF:

- Conveyors – feed, metering, incline & in-floor
- Screens – paper & card separation
- Magnetic & eddy current separators – metals separation
- Optical separator – plastics separation
- Windshifter - paper & plastic separation
- Loading shovel(s) – for the loading of the materials recovery plant
- Forklift(s) – for the movement of baled materials
- Mobile balers – for the baling of SRF material for temporary onsite storage

1.11.2 Processes/Operations – Construction Phase

Overview

The following outlines the main elements of the construction phase of the proposed development. These are identified, not sequentially, as:

- Site clearance of development area
- Excavations where required for foundations, tanks and drainage network
- Filling with a suitable fill material (granular material to approved specification) where required
- Installation of drainage networks and tanks
- Installation of cable trenches and ducting for 38kV power line diversion
- Installation of site fencing/installing lamp standards for site lighting
- Construction of building foundations for all buildings
- Preparation of hardstanding areas and internal road sub bases
- Filling of buildings sub base to underside of floor level
- Erection of structural steelwork/blockwork/pushwalls for all buildings, bays and storage areas
- Cladding and roofing of buildings
- Pouring of internal floors, subdividing walls, bay walls, hardstanding areas
- Finishing of hardstandings (concrete/ashphalt)
- Delivery of internal plant elements
- Installation of ventilation network in processing buildings
- Installation of electrical/mechanical equipment and roller shutter doors
- Site clean-up and commissioning

38kV Line Diversion

The existing tower located within the proposed development site will be relocated to a location that will be removed from any infrastructure development or potential operational processes, approximately 60 m directly east of its current location. All works in relation to the cable diversion will be undertaken by ESB Networks or an approved contractor.

Construction Period

It is estimated that the proposed development will take 9 months to complete (i.e. 36 – 40 weeks).

Construction Working Hours

Construction work will generally be carried out during daylight hours on Monday to Saturday from 08:00 to 19:00.

1.11.3 Processes/Operations – Operational Phase

Overview

It is proposed to accept up to 170,000 tonnes per annum of municipal solid waste (MSW) to be subjected to the following activities:

- the acceptance and processing of residual municipal solid waste (MSW) for transfer and for the production of solid recovered fuel (SRF)
- the acceptance of waste wood and green waste for bulking up, prior to consignment offsite to an appropriate treatment facility
- the acceptance of source segregated 'brown bin' material for bulking up, prior to consignment offsite to an appropriate treatment facility

'Bulking up' refers to the process of accepting smaller volumes of waste from refuse collection vehicles (RCV's), skips etc. and transferring this material to larger volume trailers for more efficient and economic transportation of the waste material to alternate locations.

Site Layout

Material to be accepted on site will be received within a newly constructed, fully enclosed waste reception and processing building, operating under negative air extraction, comprising reception areas, a plant processing area and material storage and loading areas. A second bale storage shed will also be constructed in the north-eastern corner of the site for the temporary housing of bales for storage in the event of SRF outlets being unavailable.

The overall facility area will occupy 2.4 ha.

In summary, the proposed development will comprise:

- The development of a waste processing and transfer facility for the acceptance of up to 170,000 tonnes per annum of residual MSW, source segregated 'brown bin' waste, waste wood and green waste with the following infrastructure:
    - A waste reception & processing building
    - A bale storage building
    - An administration building
    - Redesigned operational traffic site entrance to facilitate access from the Cappagh Road
    - A secondary entrance from the Millennium Business Park
    - Boundary treatment on the western boundary comprising fencing
    - Weighbridge and weighbridge hut
    - ESB substation
    - Odour abatement plant for the waste reception and processing building
    - Rainwater harvesting tank
    - Fuel storage tank
    - 16 no. car parking spaces
    - 6 no. truck parking spaces
    - Landscaping treatment along the southern site boundary
    - Foul drainage provision, tying in with the wider Millennium Business Park network
    - Surface water provision, with attenuation, tying in with the wider Millennium Business Park network
    - Other ancillary structures

Hours of Operation

It is proposed that the facility will operate on a 24/7 basis so that that SRF material produced at the site can be consigned from site on a consistent basis. While the facility is proposed to operate on a 24/7 basis, it is expected that the vast majority of vehicle movements (i.e. c. 80%) and processing operations will occur during daytime and evening hours, i.e. 07:00 to 23:00.

Management & Staffing

It is anticipated that the following staff will be employed during facility operation:

- 1 no. facility manager
- 1 no. site foreman
- 1 no. weighbridge operator
- 3 no. loading shovel drivers
- 3 no. general operatives

Monitoring

Facility management and/or retained consultancies will carry out the sampling and monitoring programme in accordance with the facility EPA licence. The Facility Manager will have responsibility for the implementation of the monitoring programme. Samples will be collected and transported under chain-of-custody to a laboratory.

1.12 Raw Materials

Natural resources consumed during the construction phase will include:

- Diesel fuel for construction machinery
- Steel in the building construction
- Granular material for use as in-fill material for site development works and in concrete

While exact quantities are difficult to quantify at this juncture, it is expected that the following resources will be consumed during construction:

- 6,120 m^3 of concrete
- 360 tonnes of steel
- 12,000 m^3 of fill material

Natural resources consumed during the operational phase will include:

- Diesel fuel for site machinery (loading shovels, diesel plant)
- Water
- Fuel sources for electricity consumed onsite

Assuming 3 no. dedicated plant loading shovels or similar plant items, diesel fuel consumption is estimated at 15,000 litres per annum. The estimated annual electricity demand from the facility is estimated at 6,000 MWhs, based on the level of consumption observed at the Thorntons Recycling Killeen Road facility.

1.13 Quantity and Nature of Waste (EWC Code)

Table A.1(iii) presents the estimated quantities of the three main waste stream to be managed at the facility on an annual basis during its operation along with their respective European Waste Catalogue (EWC) codes.

Table A.1(iii): Annual quantities of material to be managed onsite

EWC Codes	Waste Type	Quantity to be managed (tonnes)	Source
03 01 05; 03 01 99; 15 01 03; 17 02 01; 19 12 07; 20 01 38	Waste Wood & Green Waste	(up to) 20,000	Thorntons Recycling own collection, 3rd party deliveries to site
20 01 08	Source separated biowaste	(up to) 30,000	Thorntons Recycling own collection, 3rd party deliveries to site
20 03 01; 19 12 10; 19 12 12	Residual MSW	(up to) 120,000	Thorntons Recycling own collection, 3rd party deliveries to site

1.14 Site Environmental Conditions prior to Development

The site proposed for development is currently undeveloped and comprises a grassed surfaced portion and a gravel hardstanding area, with three disused buildings thereon. Details in relation to the existing environmental conditions of the site are presented below.

1.14.1 Air

The Millennium Business Park is located in the EPA air quality management area of Dublin (Zone A) and air quality is as per that of the wider Dublin area, measured for the Dublin zone. Dust deposition monitoring carried out on site indicated dust deposition as being within relevant guidance at 2 of 3 monitoring locations on site, but with elevated dust deposition seen at one location, adjacent to the Kilsaran Concrete batching operation. A baseline odour assessment undertaken in accordance with the EPA publication Odour Impact Assessment Guidance for EPA Licensed Sites (AG5), indicated no odour generation in the vicinity of the development site.

1.14.2 Noise

A baseline noise survey was conducted to quantify the background and ambient noise levels in the vicinity of the proposed development. Three noise monitoring locations were identified for obtaining a detailed representation of the ambient and background noise levels in the vicinity of the proposed development. Noise measurements were conducted at each of the three monitoring locations during daytime (07:00 – 19:00 hrs); evening (19:00 – 23:00 hrs) and night-time (23:00 – 07:00). Some exceedances of relevant guidance values were observed which were attributed to noise from neighbouring industrial sites and traffic noise on the Cappagh Road.

1.14.3 Surface Water

The proposed development site is located across one waterbody catchment; the Tolka River catchment. The Environmental Protection Agency (EPA) identifies that the Tolka River is currently of 'Bad' status. The waterbody is designated as 'At Risk' due to risks from point and diffuse sources. It is an objective to restore the status of this waterbody to 'Good' by 2027.

OPW Provisional Flood Risk Assessment (PFRA) mapping shows that there are no areas of the site which are subject to fluvial flooding as there are no watercourses in close proximity to the site location.

The site currently falls very gently from south to north with a c. 0.5 - 1m gradient across the site. Incident runoff is likely to percolate through to groundwater and flow towards the eastern site boundary in the direction of the adjacent Huntstown quarry. No drainage system currently exists on site. The eastern portion of the site contains a gravel hardstanding with a similar gradient as the wider site. The remainder of the site is greenfield and is considered to be of high permeability.

1.14.4 Soils, Geology and Hydrogeology

The bedrock beneath the site comprises Carboniferous Limestone. The subsoils comprise predominantly glacial till derived from limestone bedrock. Approximately 100 m to 200 m east and west of the site, bedrock is shown to be present at, or close to the ground surface.

Structurally, the Carboniferous rocks of the area are crossed by a series of northeast-southwest trending faults which are in turn dissected by a series of northwest-southeast trending faults. One of these latter faults is shown on the geological map of the area to run close to the eastern boundary of the site.

The Huntstown Quarry, a geological heritage feature and a site of high potential for crushed rock aggregate, is located adjacent to the eastern boundary of the site.

A Locally Important Aquifer underlies the site. No groundwater wells are located within 1 km of the site boundary. The overburden deposits of glacial till are generally of low permeability, with the assessed groundwater vulnerability for the site being classified as high.

The baseline report included in Attachment I.4 of this application indicates that the risk to soil and groundwater from the proposed hazardous substances to be used at the development site is low. The design and construction of the proposed development will mitigate against any potential pollution risks. This includes hardstanding across the site, a self-bunded diesel storage tank, a designated refuelling area with appropriate interceptor, a bunded storage area for oils and a segregated storage area for chemicals.

1.15 Source, Nature & Quantity of Emissions from the Site

1.15.1 Air

Source of Emissions

Odour point emissions will arise from the development, with the waste material proposed for acceptance at the facility having the potential to generate some localised odour. Dust emissions may also arise from operations on site, while vehicular emissions will arise from traffic travelling to and from the site.

Nature and quantity of existing/proposed emissions

An odour modelling assessment has been completed which identified worst case off site odour levels as being modelled at between 0.88 and 1.1 OUE/m^3, which are well within the relevant guidance values of 1.5 OUE/m^3.

The majority of any dust produced as a result of proposed site activities will be deposited close to the source and any impacts from dust deposition will be minimal.

Technology/techniques to mitigate emissions

An odour abatement system utilising annular carbon (or other appropriate media) adsorbers will be installed to treat potentially odorous air within the waste reception and processing building. In addition to the odour abatement system, all waste materials delivered to the facility shall be within covered/enclosed receptacles which will minimise any potential for fugitive emission associated with waste delivery or consignment from site.

A number of best practice mitigation measures will be enacted to mitigate against any potential dust emissions from the operation of the site. These will include, amongst others, the setting of maximum speed limits on site and ensuring that an adequate water supply is maintained on site at all times for effective dust suppression.

Summary of assessment of impact on environment

As identified, the waste reception and processing building shall operate under negative aeration with the use of an odour abatement system such that no fugitive odour emissions shall result from the waste processing operations.

An assessment of potential dust impacts from the activities associated with the operation of the proposed development, undertaken in accordance with the "Guidelines for the treatment of Air Quality during the Planning & Construction of National Road Schemes" identified a negligible risk from activities to be undertaken on site.

In terms of vehicle emissions, the proposed development will contribute to a negligible direct impact on ambient air quality, with an overall maintaining of existing values or a slight increase in some pollutant concentrations on relevant roads in the vicinity of the site.

1.15.2 Noise

Source of Emissions

Noise will arise from activities within the waste processing building and from traffic movements (notably the HGVs) to and from the site and in the site yard.

Nature and quantity of existing/proposed emissions

Modelling indicates that all noise sensitive receptors will be compliant with the EPA's daytime, evening and night-time noise limits.

Technology/techniques to mitigate emissions

A number of best practice mitigation measures will be enacted to mitigate against any potential noise emissions from the operation of the site. These will include, amongst others, ensuring that noisy plant and equipment are not used for long periods of time at inappropriate times, ensuring that all building doors are kept closed and using equipment that conforms to EU noise standards.

Summary of assessment of impact on environment

No significant impacts are expected.

1.15.3 Surface Water

Source of Emissions

There will be a direct surface water discharge from the site via a site drainage system that will be connected to existing sewers in the Millennium Business Park and discharge to the Tolka River.

Nature and quantity of existing/proposed emissions

Likely emission parameters that may be observed in surface water emissions from the facility are typical for waste management facilities in general, and include:

- BOD
- COD
- Suspended solids
- pH
- Temperature
- Mineral Oil
- Conductivity

Drainage from the proposed development will be attenuated to greenfield runoff rates, ensuring that emissions are minimised.

Technology/techniques to mitigate emissions

To reduce the potential impacts on surface water, a SuDS drainage system has been developed to mitigate any contamination of surface water and any increase in surface water run-off as a result of the proposed increase in hard surfaces for the development.

A Class 1 full retention hydrocarbon interceptor and silt trap will be incorporated into the drainage system to treat runoff prior to discharge to the Millennium Business Park drainage system.

An attenuation structure will also be constructed at the site which will limit surface water flows to the existing drainage system. Flows will pass through a hydrobrake to limit flows to that of the greenfield runoff rate.

Summary of assessment of impact on environment

The risk to the receiving watercourses will be negligible. The potential for pollution from the facility is reduced significantly through mitigation measures which will help avoid contamination of the drainage system.

1.15.4 Foulwaters

Source of Emissions

There will be a direct foulwater discharge from the site via a foul collection system that will be connected to the Millennium Business Park foul drainage system, which flows to the Ringsend Wastewater Treatment plant.

Nature and quantity of existing/proposed emissions

The total maximum daily foulwater flow from the site is estimated at 8.72 cu.m. While this represents the maximum flow, it is anticipated that there will typically be a flow of between 2-3 cu.m per day as intermittent washdown occurs and/or leachate drains to the collection network within the waste reception and storage building.

The foul water discharge from the site will end up in Ringsend Waste Water Treatment Plant (1.64 million p.e.). At 100 p.e., this would provide 0.00006% of the loading to Ringsend.

Leachate concentration will vary depending on extent of washdown etc., but it is considered that the concentration of emissions potentially discharged will comfortably fall within limit values.

Technology/techniques to mitigate emissions

The construction of the site foulwater system will represent the primary mitigation measure for foulwater discharges from the proposed development.

Summary of assessment of impact on environment

The risk to the receiving watercourses will be negligible.

1.15.5 Ground/Groundwater

There will be no direct emissions to groundwater from the proposed activities at the site.

1.16 Measures to Monitor Emissions

The means of monitoring, proposed monitoring points and frequencies of monitoring for each parameter are presented in Table A.1(iv), while the proposed monitoring locations are presented in Drawing LW1504602_L-008.

Table A.1(iv): Monitoring Details

Monitoring Parameter	Means	Location	Frequency
Dust	Bergerhoff and laboratory analysis	D1	Three times per annum
		D2	
Foulwater	Grab sampling & laboratory analysis using standard methods	SE1M	Quarterly
Surface water	Grab sampling & laboratory analysis using standard methods	SW1M	Weekly & Quarterly (parameter dependent)
Noise	Meter reading	N1	Annually
Odour	Olfactometry & dispersion modelling	O1M	Annually

LEGEND

- Site Boundary
- Existing Ground Contour
- Noise Monitoring Point — N1
- Dust Monitoring Point — D1
- Odour Monitoring Point — O1M
- Surface Water Monitoring Point — SW1M
- Foul Water Monitoring Point — SE1M

Point Code	Point Type	Easting	Northing
O1M	Atmospheric	710373	740807
SE1	Sewer	710246	740810
SW1	Surface water	710248	740812
N1	Noise	Southern Facing Roller Shutter Door	
N2	Noise	Eastern Facing Roller Shutter Door	

Point Code	Point Type	Easting	Northing
D1	Monitoring	710369	740878
D2	Monitoring	710327	740706
SE1M	Monitoring	710246	740810
SW1M	Monitoring	710248	740812
N1	Monitoring	710182	740820
O1M	Monitoring	710373	740807

Scale 1:2500

ORIGINAL DRAWING SIZE A1 - (841 x 594)

Rev.	Drawn	Chk'd	App'd	Date	
A	CH	DM	BG	Cork 13.03.17	Issue For Planning Application

Revision History: A — INFORMATION

Name of Client: Thorntons recycling

Name of Job: PROPOSED MATERIALS PROCESSING & TRANSFER FACILTY AT MILLENNIUM BUSINESS PARK

Title of Drawing: MONITORING POINT LOCATIONS

Scales Used: 1:2500

This Drawing was printed to A3.

Dwg. No.: LW15-046-02-L-008

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1.17 Arrangements for Prevention, Minimisation and Recovery of Waste Arising from the Activity

Waste creation will be prevented and minimised throughout the project by taking steps such as the prefabrication of design elements, suitably designing materials storage areas, optimising materials ordering and servicing plant prior to its use on site to reduce the generation of waste oil/hydrocarbons.

During construction, materials will be re used on site where possible for alternative suitable purposes, e.g. the re use of excavated materials as fill elsewhere on site. Waste generated that is not suitable for re-use will be direct for recycling or recovery as appropriate, through the applicants networks of existing waste management facilities.

All non-process related wastes generated onsite during operations (from administration building, weighbridge office etc.) will be managed at relevant Thorntons Recycling waste management facilities.

1.18 Measures to be undertaken under abnormal operating conditions

Accident Prevention and Emergency Response procedures will be produced as part of the Environmental Management System that will be developed for the facility in accordance with Thorntons Recycling existing ISO14001 accreditation.

1.19 Measures to protect groundwater

With no discharges to groundwater and the development of a hardstanding surface across the entire site, no impacts on groundwater will occur.

1.20 Measures to minimise long distance or transboundary pollution

The prosed development given its nature and scale will not result in or contribute to any long distance or transboundary pollution.

1.21 Decommissioning, Aftercare and Restoration

In the event of permanent cessation, it is anticipated that the following decommissioning and closure measures will be undertaken at a minimum:

- the operator will ensure that all waste materials are removed off site for appropriate treatment at licenced/permitted facilities
- the processing plant used will be removed from the site
- portable structures/plant will be removed from the site, where applicable
- road sweeper vehicles will be employed to clean the site
- any tanks will be decommissioned and emptied by a licenced contractor

An outline closure plan has been developed as part of this application that that identifies the requirement to undertake a closure audit upon permanent cessation of site activities that will assess, inter alia, the success of the closure plan and the requirements, if necessary, to return the site to the state established in the baseline report.

Following the closure of the facility, ongoing environmental monitoring will be carried out in accordance with the requirement of the facility IE licence until such time as a licence may be surrendered.

1.22 Main Alternatives

Alternatives in relation to this proposed development are considered in terms of alternative site location, alternative processes at the preferred site and a 'do-nothing' alternative.

While the Millennium Business Park site is broadly comparable to the alternative sites that were considered from an access, services and planning and environmental issues viewpoint, it is preferable due to the lack of capacity in the existing Thorntons Recycling sites to incorporate the proposed development, mainly due to these sites currently operating at physical (footprint) and input tonnage capacity.

As part of the preliminary design process for the proposed development, a number of different facility configurations and layouts were identified by the designers for consideration by Thorntons Recycling, with the preferred site layout option subsequently being agreed upon by Thorntons Recycling.

Alternative waste management processes that could potentially be carried out at the Millennium Business Park site were also examined for completeness. The facility at Millennium Business Park may be suitable for development as a dry mixed recyclables (DMR) processing facility or a medium to large scale biological waste treatment facility. However, there is no strategic requirement for the development of further DMR processing capacity or biological treatment capacity by Thorntons Recycling at this time.

In the event of the proposed development not occurring, there will be no infrastructural development at the Millennium Business Park site, which will remain as an undeveloped site within an urban industrial development belt. The proposed waste streams for acceptance will continue to be managed by other means i.e. through existing channels/facilities. A lack of suitable intermediate management capacity may result for future increasing waste quantities.

1.23 BAT

As part of the Industrial Emission (IE) licence application to the EPA, it is necessary to identify how the procedures and processes to be implemented at the proposed development will be considered as Best Available Techniques (BAT). The relevant BAT processes are identified in a range of documents known as BAT Conclusions (CID) or where these have not been adopted by the Commission of the European Union, the conclusions on BAT from the relevant BAT reference documents (BREF).

Documents considered as part of the BAT assessment undertaken as part of the IE licence application include:

- European Commission – Reference Document on Best Available Techniques for the Waste Treatment
- Industries (BREF Document) – August 2006
- Best Available Techniques (BAT) Reference Document for Waste Treatment (Draft) – December 2015
- European Commission – Reference Document on Best Available Techniques for Energy Efficiency
- (BREF Document) – February 2009
- European Commission – Reference Document on the General Principles of Monitoring – July 2003
- European Commissions – Reference Document on Best Available Techniques on Emissions from Storage – July 2006EPA – BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and
- Materials Recovery – December 2011

While the above documents outline a significant number of BAT references, the following summarises those most relevant that will be applied as part of the development:

- Implementation of an EMS and energy management systems
- Recording and inspecting incoming wastes
- Recording outgoing wastes
- Maintaining a dedicated waste quarantine area
- Having a sealed drainage system

- Recording and reporting on energy usage
- Appropriate storage of waste material
- Handling odorous materials in an enclosed building connected to abatement
- Production of recovered fuel to required specifications through use of appropriate plant and equipment
- (eddy current and magnetic separators, optical sorters, shredders)
- Emissions from storage of material on site
- Implementation of a sampling regime for appropriate parameters

A more detailed assessment of BAT application is presented in the application form

1.24 Attachment A1

The Non-Technical Summary (Volume 1) of the EIS submitted with the proposed development is included as Attachment A1 in the following.

Attachment A1 Non-Technical Summary

ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

THORNTONS RECYCLING

ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED DEVELOPMENT AT MILLENNIUM BUSINESS PARK

VOLUME 1 - NON-TECHNICAL SUMMARY

JANUARY 2017

FEHILY TIMONEY & COMPANY

THORNTONS RECYCLING

ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED DEVELOPMENT AT MILLENNIUM BUSINESS PARK

VOLUME 1 - NON-TECHNICAL SUMMARY

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Final Issue	SG/DFM/MG	DFM	DFM	06.01.2017

Client: Thorntons Recycling

Keywords: Millennium Business Park, Environmental Impact Statement (EIS), non-technical, consultation

Abstract: Fehily Timoney and Company (FTC) was retained by Thorntons Recycling to prepare an environmental impact statement (EIS) for the proposed development at Millennium Business Park, Cappagh Road, Dublin 11. The potential impacts on the human environment, air and climate, roads and traffic, noise, ecology, geology, hydrogeology, hydrology and water quality, landscape, archaeology and cultural heritage, and material assets are evaluated. This document (Volume 1) consists of a non-technical summary of the information provided in the main volume (Volume 2) of the Environmental Impact Statement which accompanies the planning application to An Bord Pleanála for the proposed development at Millennium Business Park.

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1 INTRODUCTION

Fehily Timoney & Company (FTC) was appointed by Padraig Thornton Waste Disposal Ltd. t/a Thorntons Recycling to prepare the Environmental Impact Statement (EIS) for the proposed development at the Millennium Business Park, Cappagh Road, Dublin 11 to accompany a planning application to An Bord Pleanála.

It is proposed to develop a materials processing and transfer facility at the Millennium Business Park site for the acceptance of up to 170,000 tonnes per annum of municipal solid waste (MSW) from commercial and domestic sources, comprising 'black bin' residual waste, 'brown bin' organic waste, waste wood from construction and other sources, as well as green waste.

The development site is located at the Millennium Business Park, Cappagh Road, Dublin 11 and is c. 2.4 ha in area. It is located in the townlands of Grange and Cappoge, approximately 4 km north-west of Finglas village and 3 km north-east of Blanchardstown village. The site location for the proposed development is as shown in Figure 1-1 and an aerial view of the site is shown in Figure 1.2.

1.1 Applicant – Thorntons Recycling

The applicant is Thorntons Recycling (TR) who are the owners of the development site at the Millennium Business Park, Cappagh Road, Dublin 11.

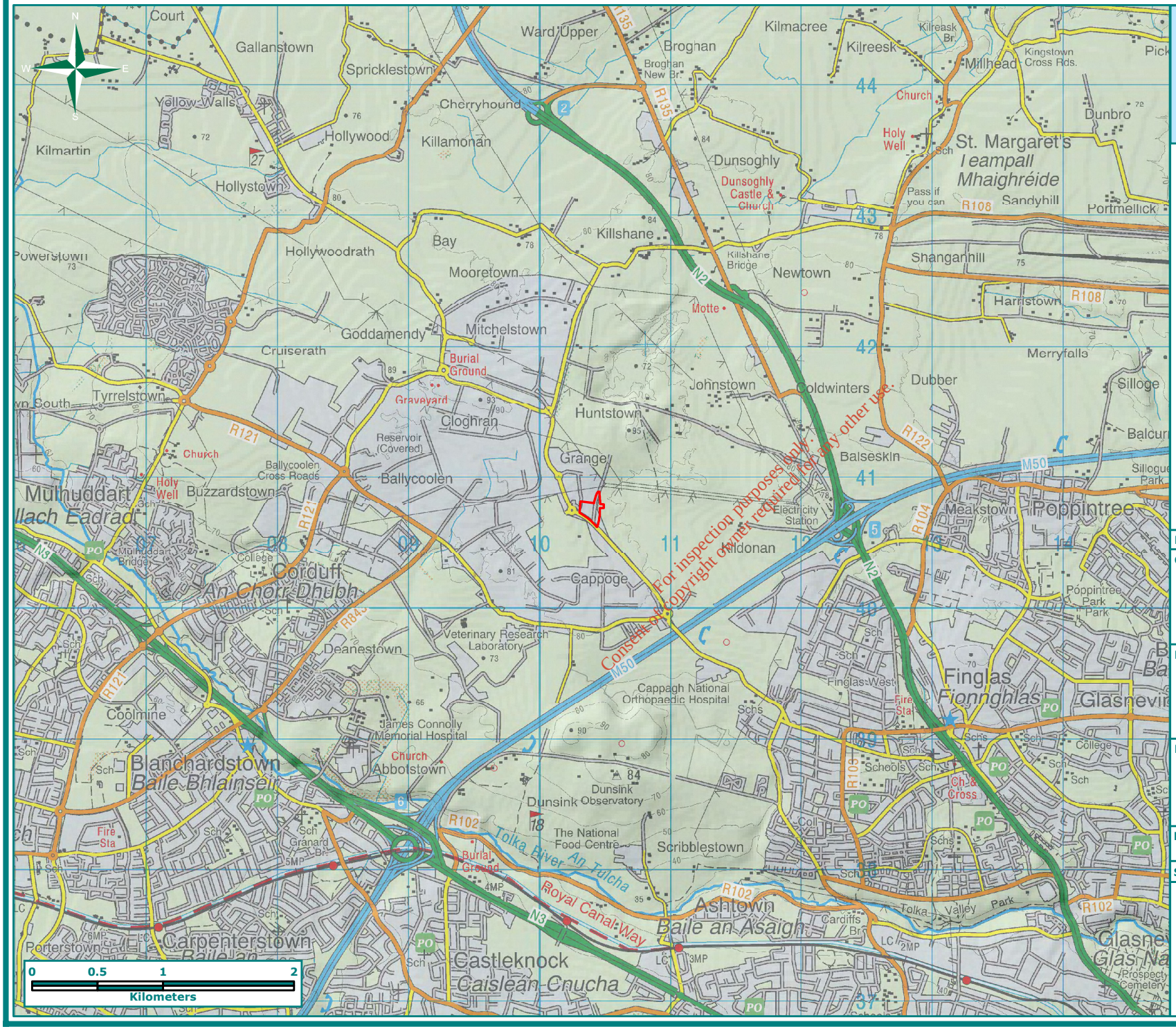
Thorntons Recycling was founded in 1979 by Padraig and Carmel Thornton and has grown into one of the largest waste management companies providing waste collection, recycling and recovery services predominately in Dublin, Meath, Kildare and Wicklow, but it also has the capabilities to operate nationally.

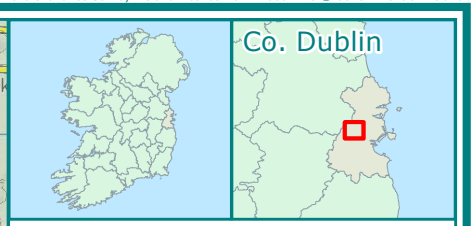
The customer base encompasses the domestic, public and private sectors with annual sales in excess of €50 million. Thorntons Recycling continues to grow sustainably and currently has over 60,000 household customers along with over 4,000 commercial customers.

Its domestic customer base encompasses areas in South Dublin, Dublin City, Meath, Kildare and Wicklow and its commercial customer base is nationwide, with customers based from Cork to Donegal and Dublin to Galway. The company achieved an overall recycling rate of 91.34% in 2015 and currently the company employs over 400 staff.

Thorntons Recycling places its emphasis on recycling, energy recovery and the diversion of waste from landfill. As well as accepting material which is collected by Thorntons own fleet of vehicles, it also accepted materials from other waste companies at its facilities. Over its six facilities in 2015, Thorntons accepted 381,148 tonnes and diverted approximately 70,000 tonnes directly to third party facilities.

Thorntons Recycling operates three waste licensed facilities, issued by the Environmental Protection Agency (EPA) and three waste permitted facilities, issued by Dublin City Council. All Thorntons Recycling licenced and permitted facilities have achieved and maintained ISO 14001, OHSAS 18001 and Quality 9001 standards since 2009.





Legend

Proposed Site Boundary

Date	13/10/2016
Client Name	Thorntons Recycling
Project Title	EIS for Proposed Development at Millennium Park
Figure Title	Site Location
Figure No.	1.1
Rev.	A
Scale	1:40,000 @ A4

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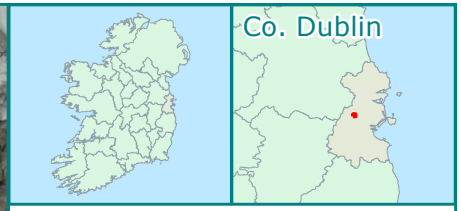

Legend

Proposed Site Boundary

Date	13/10/2016
Client Name	Thorntons Recycling
Project Title	EIS for Proposed Development at Millennium Park
Figure Title	Aerial View of Site Location
Figure No.	1.2
Rev.	A
Scale	1:5,000 @ A4

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1.2 Application and EIS Process

The proposed development is deemed to be strategic in accordance with the provisions of Section 37(A) of the Planning and Development Act 2000, as amended. Consequently, this EIS accompanies an application made to An Board Pleanála under Strategic Application Reference Number PC0218.

Environmental Impact Assessments (EIA) are carried out according to the requirements set out in the EIA Regulations (EIA Regulations 1989 (SI No. 349 of 1989), EIA (Amendment) Regulations (SI No. 93 of 1999) and EIA (Planning and Development Act, 2000) Regulations 2012 (SI No. 419 of 2012)).

The purpose of this EIS is to provide a detailed description of the proposed development and outline potential impacts associated with the construction and operation of the development. Where adverse impacts have been identified, mitigation measures are proposed.

1.2.1 Requirement for an EIS

Under Section 37(E) of the Planning and Development Act 2000, as amended, a planning application for a development which comes within the scope of Section 37(A) of the Act must be accompanied by an EIS.

The European Union Directive 2011/92/EU[1] on *the assessment of the effects of certain public and private projects on the environment,* requires Member States to ensure that a competent authority carries out an appraisal of the environmental impacts of certain types of project, as listed in the Directive, prior to development consent being given for the project. The proposed development at Millennium Business Park is such a project. The environmental impact assessment of the proposed development at Millennium Business Park will be undertaken by An Bord Pleanála, in accordance with Section 37(E) of the Act, as amended.

1.2.2 Additional Consents

In compliance with the provisions of Article 6 of the Habitats Directive,[2] as implemented by the Planning and Development Act 2000, as amended, in circumstances where a proposed plan or project is likely to have a significant effect on a European (or Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the competent authority of the implications for the site in view of the site's conservation objectives. Screening for appropriate assessment is the first stage of the AA process (Stage One), in which the possibility of there being a significant effect on a European site is considered.

Where screening concludes that there is the potential for significant effects, then it is necessary to carry out an AA (Stage Two), and a Natura Impact Statement is produced.

A Stage 1 AA screening report has been prepared to accompany this EIS, with further detail provided in Chapter 10 of Volume 2.

[1] Recently amended by the 'new' EIA Directive 2014/52/EU but not yet transposed to Irish legislation
[2] Council Directive 92/43/EC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

1.3 Environmental Impact Statement

1.3.1 Environmental Impact Statement Methodology

Pursuant to the provisions of EU and Irish law, when a proposed development is required to be the subject of an EIA, the developer is required to present information to the competent authority in an EIS for examination by the competent authority.

Thus, an EIS is required to provide information so as to ensure that the competent authority (in this instance, An Bord Pleanála) may make a reasoned conclusion on the significant effects of the project on the environment, taking account of, *inter alia*, the information contained in the EIS.

The EIS for this project has been prepared in accordance with EIA-specific and other relevant environmental legislation, guidance and advice notes. As part of the preparation process for the EIS, there has been extensive consultation with the competent authority, prescribed bodies and the public and other interested parties.

This document is Volume 1 of the EIS and comprises a Non-Technical Summary of the information contained in the main EIS report in Volume 2. Appendices are contained within Volume 3.

1.3.2 Environmental Impact Statement Structure

The EIS has been structured as described below. The detailed information in respect of each environmental aspect is provided in the main EIS report, Volume 2, and each of those sections is dealt with in summary form in this Non-Technical Summary as follows:

- Description of the Proposed Development
- Policy and Legislation
- Need, Alternatives and Consultation
- Human Environment
- Air Quality and Climate
- Roads, Traffic and Transportation
- Noise and Vibration
- Flora and Fauna
- Soils, Geology and Hydrogeology
- Surfacewater Quality and Drainage
- Landscape
- Archaeological, Architectural and Cultural Heritage
- Material Assets
- Inter-relationships and Interactions

1.4 Requirements for a Non-Technical Summary

In accordance with the provisions of the EIA Directive[3] and article 94 of Schedule 6 to the Planning and Development Regulations 2001, as amended, this report is a summary in non-technical language of the information provided in the EIS.

[3] Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification). It should also be noted that certain amendments have been effected to the EIA Directive by Directive 2014/52/EU), which entered into force on 15 May 2014,

1.5 Cumulative Assessment

Cumulative assessment assesses the impact of a proposed development in conjunction with other existing or proposed development located nearby or in the vicinity of the development in question, such that the potential combined environmental impacts can be accurately assessed in the event of the proposed development proceeding.

In relation to the issue of cumulative effects between this proposed development and other projects, the most obvious is the effect of a combination of the proposed development and the existing waste management facilities and quarrying operations in the immediate vicinity of the proposed development and general industrial and commercial operations within the wider vicinity of the development location.

Developments such as these may have the potential to result in a magnified impact in a number of environmental media due to their nature i.e. noise, air quality (dust) and traffic. These developments have been taken into consideration in a number of chapters in the EIS, specifically those assessing Air quality & Climate; Roads, Traffic & Transportation; Noise & Vibration and Surfacewater Quality & Drainage, where potential cumulative impacts have been assessed.

An analysis of the relevant cumulative effects is set out in Chapter 16 'Inter-relationships & Interactions' of Volume 2 of the EIS.

1.6 Difficulties Encountered

There were no technical difficulties encountered during the preparation of this environmental impact assessment.

1.7 Viewing and Purchasing the EIS

This EIS is available for complimentary download at www.thorntonsrecyclingmillenniumpark.com.

Any member of the public can view the planning application and accompanying EIS documentation, including the Non-Technical Summary and Stage 1 Appropriate Assessment, free of charge or can purchase on payment of a specified fee during normal office hours at the following location:

- An Bord Pleanála, 64 Marlborough Street, Dublin 1, D01V902
- Fingal County Council, Civic Offices, Grove Road, Blanchardstown, Dublin 15
- Fingal County Council, County Hall, Main Street, Swords, Co. Dublin.

to simplify the rules for assessing the potential effects of projects on the environment. Member States have until 16 May 2017 to transpose these obligations into national law.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Existing Site

2.1.1 Site Location

The development site is located at the Millennium Business Park, Cappagh Road, Dublin 11 at an elevation of c. 82 mOD and is c. 2.4 ha in area. It is located in the townlands of Grange & Cappoge, approximately 4 km north-west of Finglas village and 3 km north-east of Blanchardstown village. The site is located approximately 700 m directly north of the M50 and 1.4 km west of the N2.

The site is currently undeveloped and comprises a grassed surfaced portion and a gravel hardstanding area, with two disused buildings thereon. The site is not currently enclosed along its western boundary. It is bordered to the immediate north by 2 no. concrete processing facilities and an existing waste management facility, to the east by an active quarry, to the south by the Cappagh Road and to the west by a light industrial unit and undeveloped lands.

There are a large number of commercial and industrial units within 1 km of the site boundary. In addition to the Millennium Business Park in which the site is located, the Northwest, Ballycoolin, Huntstown, Rosemont, Stadium, Keypoint and Premier Point Business Parks are also located nearby. The nearest major residential zones are Finglas West, located approximately 1.5 km south east of the site, and Corduff, located approximately 2 km south west of the site. There is one residential dwelling located approximately 270m south-east of the site on the Cappagh Road.

2.1.2 Site Access

Access to the site is via two existing entrances from the Cappagh Road and through the Millennium Business Park. The existing entrances are currently blocked off to prevent unauthorised access. Access to the site through the Millennium Business Park is via the unenclosed western portion of the site.

2.1.3 Site Security

While the western portion of the site is unenclosed, a boundary fence runs along the southern and eastern flanks of the site, while a concrete block wall divides the site at its northern boundary from the adjacent concrete processing facility.

2.1.4 Site Infrastructure

There are 2 no. disused building onsite, located in the south eastern corner of the site adjacent to the existing entrances.

The Finglas- Ballycoolin 38 kV power line traverses the site, both overground and underground. A 12 m line termination mast is located east of centre on site. From this mast, the line runs overhead in an easterly direction over the adjacent Huntstown Quarry and runs south and then westerly in a gradual arc underground to another mast located approximately 20m from the western site boundary.

The grassed portion of the site is currently free draining while some surfacewater drainage infrastructure is in place on the existing hardstanding that drains to ground. Located directly adjacent to the western boundary of the site are connection points (manholes) to the wider Millennium Business Park foul and surfacewater drainage network.

2.2 Details of the Proposed Development

The layout of the proposed site upon completion is presented in Figure 2-1. Details on the site infrastructure proposed for development is presented below.

2.2.1 Proposed Site Infrastructure

Site Buildings

A waste processing building with a total area of c. 7,323 m^2 will be constructed. This building will be subdivided into the following areas:

- Solid Recovered Fuel (SRF) intake area (c. 620 m^2 floor area)
- SRF processing line (c. 1,080 m^2 floor area)
- SRF output storage (c. 1,440 m^2 floor area)
- Enclosed biowaste and residual MSW storage area (c. 960 m^2 floor area)
- Waste wood and green waste storage area (including a waste quarantine area – c.550 m^2 floor area)
- Loading annex and trafficked areas

The height of the building will be c.10 m to eave and c. 12 m to ridge, incorporating a c. 12 m parapet on all sides. 1 no. door to the building will be located at its southern end, with 2 no. doors located at the south eastern flank of the building. Concrete walls of c.6 to 8 m in height and 0.5 m in thickness will be constructed internally within the building. The biowaste and residual MSW storage area shall be further enclosed as a dedicated area so as to limit odour impacts. The building will be supplied with an ESB power supply that will come from the ESB substation onsite. Security and fire alarm systems will be put in place in the building.

A single story bale storage building with a floor area of c. 1,559 m^2 will be constructed in the north-east of the site. The building will be subdivided internally by walls to support the stored bales. 2 no. doors will be located on the eastern flank of the building. The building will have a relatively low power requirement which will be provided by the ESB substation on site. Lighting and fire alarm systems will be put in place in the building.

A single story administration building will be constructed to provide welfare facilities for the site operatives and an administration centre for the site management. The total floor area of the building will be c. 432 m^2 with a height to ridge of c. 7.5 m. The building will be subdivided internally to include for staff locker room and wash facilities, staff canteen, drying room, reception, 1 no. WC and 2 no. offices. The building will be supplied with an ESB power supply that will come from the ESB substation onsite. Security and fire alarm systems will be put in place in the building.

Site Security

The site is currently bound to the east, north and south by existing perimeter fencing – it is not proposed to alter these boundaries. A fence of c. 2.4 m in height will be installed along the western boundary within the Millennium Business Park. Access to the site from the Millennium Business Park will be via a newly installed entrance gate on the western boundary, while the re-designed site entrance from the Cappagh Road will incorporate the main facility entrance gate. Access to the site outside of operational hours will be restricted by both entrance gates. A CCTV system will be installed at the facility which will be used to monitor the perimeter and main yard area. Monitoring, logging and supervision of all waste vehicles and other visitors will be carried out. Visitors to the site will be required to log in at the reception of the administration building.

LEGEND

- Site Boundary
- Finglas - Ballycoolin 38Kv Diversion Revised Wayleave
- Existing Ground Contour
- Proposed Landscaped Areas

Electricity Wayleave
Administration Building
Site Notice Location
Staff Entrance Refer To Dwg P-205 For Further Detail
Millennium Business Park
Cappagh Road
FFL = 82.7m
Staff Parking, 16 No. Spaces
Security Gate
Site Boundary
Rainwater Harvesting Tank
Bunded Fuel Tanks
FFL = 82.5m
Refer To Dwg P-204 For Further Detail Of New Entrance
Truck Parking
Odour Abatement System
FFL = 81.5m
Site Notice Location
Electricity Substation
Main Operations Entrance
Weighbridge Building
Site Boundary
Outline of Existing Buildings (To Be Removed)
Reinforced Concrete Hardstanding Throughout Site
Gravelled Hardstand
Waste Processing Building
Entrance Doors
Bale Storage Building
New Palladin Security Fence Similar To Existing
RELCOATED FINGLAS BALLYCOOLIN 38Kv TOWER. Refer to Dwg P-207

Scale 1:1000

Rev.	Drawn	Chk'd	App'd	Description
A	SK	DM	BG	Issue For NTS
			Cork	
			Rev Origin	
			Date	

Revision History: A | B | PLANNING

Name of Client

Thorntons recycling

Name of Job

PROPOSED MATERIALS PROCESSING & TRANSFER FACILTY AT MILLENNIUM BUSINESS PARK

Title of Drawing

1:1000 SITE LAYOUT PLAN

Scales Used	This Drawing was printed to
1:1000	A3-

Dwg. No.	Rev.
LW15-046-02-NTS-Figure 2.1	B

O:\ACAD\2015\LW15\046\02\LW1504602_NTS-FIGURE 2.1

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ORIGINAL DRAWING SIZE A1 - (841 x 594)

Site Roads, Parking & Hardstanding

A hardstanding area will cover the entire site. Internal traffic on the hardstanding area will be directed along marked portions. There will be 16 no. parking spaces for visitors and staff.

Weighbridge

A dual weighbridge system is proposed for the facility. The weighbridges and weighbridge hut (c. 50 sq. m.) will be located c. 27 m from the site boundary. The weighbridge system will be linked to a digital weight indicator and the software will record all information required by the facility EPA licence. This information will be relayed to the central computer system in the administration building.

Traffic Control

HGV traffic entering the facility via the main facility entrance will be directed to the weighbridge. All traffic entering the waste processing building must pass over the weighbridge. Similarly, vehicles will be weighed when exiting the site. An appropriate turning circle is provided to allow vehicles that may be over or under weight to return to the facility to amend their loads before passing over the weighbridge once again.

Car and occasional LGV traffic entering via the Millennium Business Park entrance shall be directed to the designated car parking areas in the case of employees and visitors, and to the wider site in case of LGVs.

Site Services

Electrical supply to site will be via a dedicated onsite ESB substation. An application for telecom connection to the site shall be made to provide telecom/internet services to the offices. Mains water supply shall be via the existing supply point directly west of the western site boundary. The 120 m^3 capacity rainwater harvesting tank, to be located along the northern flank of the waste processing building shall act as a further supply if necessary.

Fuel Storage

A 5,000 litre diesel tank will be installed adjacent to the northern flank of the waste reception & processing building. This will be used for the re-fuelling of on-site plant and vehicles. The tanks will be bunded and a spill kit will be located adjacent to the re-fuelling area. Drip trays will be used during re-fuelling.

Odour Abatement

An odour abatement system will be installed to treat potentially odorous air within the waste reception and processing building. The system shall maintain negative aeration within the building such that building air is drawn through the system, prior to discharge to the atmosphere via a 20 m stack. The system shall be installed at the north eastern corner of the waste reception and processing building. Further detail in relation to the odour abatement system is included in Chapter 7 of Volume 2 of this EIS.

Fire Control

In facilities of this nature, fires are prevented by operating best practice including:

- Inspection of loads at the weighbridge
- Control of loads to ensure no burning or smouldering loads enter the facility
- Designation of smoking/non-smoking areas
- Security
- Smoke detectors and fire alarm
- Fire extinguishers, hoses and hydrants
- Staff training

All buildings will be equipped with heat and smoke sensors so that in the event of a fire both the site management and emergency services can be quickly alerted. Portable firefighting equipment will be located at various locations throughout the buildings and the underground surfacewater collection tanks will also act as back up fire-fighting water storage tanks.

2.2.2 Proposed Processing Plant

The following items may be utilised within the waste processing building:

- Conveyors
- Screens – paper & card separation
- Magnetic & eddy current separators – metals separation
- Optical separator – plastics separation
- Windshifter - paper & plastic separation
- Loading shovel(s)
- Forklift(s)
- Mobile balers

2.2.3 Proposed Surfacewater and Foulwater Drainage Infrastructure

A storm runoff system will be constructed at the facility in order to manage runoff from the roofs and hardstanding areas on the site. Clean stormwater runoff from the roof of the waste processing building will be collected in the rainwater harvesting tank which will be used for wash-down activities at the facility.

The site foulwater system will collect runoff from the areas where waste is to be processed and stored within the waste processing building and the bale storage building, as well as from sanitary facilities within the administration building. Water from wash down activities, as well as any leached effluent from the waste itself and from the vehicles in the waste storage areas will be captured within the foul collection system. Chapter 12 of Volume 2 of this EIS provides further detail in relation to surface and foul water management.

2.2.4 Proposed 38kV line diversion

The existing tower located within the proposed development site will be relocated to a location that will be removed from any infrastructure development or potential operational processes, approximately 60 m directly east of its current location within the site boundary. All works in relation to the cable diversion will be undertaken by ESB Networks or an approved contractor.

2.2.5 Proposed Waste for Acceptance

The total throughput at the facility will be up to 170,000 tonnes per annum. The following waste materials will be accepted:

- Up to 120,000 tonnes per annum of residual MSW
- Up to 20,000 tonnes per annum of waste wood/green waste
- Up to 30,000 tonnes per annum of source segregated ‘brown bin’ material

2.2.6 Proposed Site Activities

As identified above, it is proposed to accept up to 170,000 tonnes per annum of waste material. The following activities will take place on site:

- the acceptance and processing of residual MSW for transfer and for the production of SRF
- the acceptance of waste wood and green waste for bulking up, prior to consignment offsite to an appropriate treatment facility
- the acceptance of source segregated 'brown bin' material for bulking up, prior to consignment offsite to an appropriate treatment facility

'Bulking up' refers to the process of accepting smaller volumes of waste from Refuse Collection Vehicles (RCV's), skips etc. and transferring this material to larger volume trailers for more efficient and economic transportation of the waste material to alternate locations.

2.2.7 Proposed Site Operation

Hours of Operation

It is proposed that the facility will operate on a 24/7 basis so that that SRF material produced at the site can be consigned from site on a consistent basis. While the facility is proposed to operate on a 24/7 basis, it is expected that the vast majority of vehicle movements (i.e. c. 80%) and processing operations will occur during daytime and evening hours, i.e. 07:00 to 23:00.

Management & Staffing

It is anticipated that the following staff will be employed during facility operation:

- 1 no. facility manager
- 1 no. site foreman
- 1 no. weighbridge operator
- 3 no. loading shovel drivers
- 3 no. general operatives

Pest Control

A vermin control specialist will be retained to implement vermin control measures on site. The facility will be regularly inspected and the required measures taken if evidence of vermin is found on site. Regular litter patrols of the site perimeter will also be undertaken at the site and a road sweeper vehicle will be contracted to visit the site on a regular basis to clean down all hardstanding surfaces

Management of wastes generated onsite

All non-process related wastes generated onsite (from administration building, weighbridge office etc.) will be managed by a suitable waste management contracting company and will be taken off site for treatment at relevant Thorntons Recycling waste management facilities.

Monitoring

Facility management and/or retained consultancies will carry out the sampling and monitoring programme in accordance with the facility EPA licence.

The Facility Manager will have responsibility for the implementation of the monitoring programme. Samples will be collected and transported under chain-of-custody to a laboratory.

2.2.8 Waste Acceptance and Handling

All waste accepted at the facility will be subject to waste acceptance measures which will be outlined in the facility's environmental management system (EMS).

When waste arrives on-site, it will be weighed at the weighbridge and the vehicle registration number and origin of the load entered into the software system. A weight docket will be printed for each waste load. The waste vehicle will then be directed to the appropriate area of the waste processing building.

Input wastes for SRF production will be accepted within the SRF intake area. Material will be accepted from either RCVs or walking floor trailers that tip on the building floor, where it will be visually inspected. Any material deemed unsuitable for processing will be transferred to the dedicated waste quarantine area within the waste processing building. Input material will be fed into the SRF processing line.

The SRF processing line will process the material to an appropriate SRF specification for acceptance at cement kilns. It is anticipated that 10 – 15% by weight of the input material shall be removed through the processing plant. Removed materials i.e. ferrous metals, aluminium, certain plastics and fines fraction shall be collected in individual skips in bays underneath the processing plant and removed from the facility for appropriate management at other facilities.

SRF material that comes off the processing line will be stored within the SRF output storage area, which provides 3-4 days' storage capacity. During such time when outlets for SRF may be unavailable, it will be necessary to temporarily store the SRF material produced. 'Loose' SRF material will be baled, with bales produced transferred to the dedicated bale storage building, located at the northern end of the facility. Bales will be stored internally here until such time as outlets become available again – the bale storage building provides capacity for approximately 3,000 to 3,500 bales of SRF.

The enclosed biowaste and residual MSW storage area, located within the south-western corner of the waste processing building, provides an area for the acceptance and bulking up of source separated 'brown bin' biowaste and residual MSW (mainly of domestic origin), prior to transfer to other facilities for further treatment and management.

These materials will be unloaded within the enclosed storage area after delivery (mainly in RCVs) and visually inspected. The material will then be loaded into trailers and consigned to appropriate treatment facilities – brown bin biowaste will be directed for biological treatment, while residual MSW will be directed for further recovery, principally through thermal treatment at an energy from waste facility. As identified, this storage area will be fully enclosed within the wider building and will be subject to more intensified air extraction given the more odorous nature of the material to be accepted here.

A dedicated area in the southern part of the building will be used for reception, storage and bulking of waste wood and greenwaste accepted at the facility. Waste wood and greenwaste will be accepted in skips and other LGVs, where it will be tipped on the building floor and visually inspected, prior to bulking up and consignment form site for appropriate treatment.

A dedicated waste quarantine area will be provided within the waste processing building for the temporary storage of wastes that are deemed not suitable for processing, prior to its removal off site and transfer to an appropriate facility for disposal or recovery. This area will be located in close proximity to the waste wood and greenwaste storage area.

2.2.9 Construction Phase Methodology

It is estimated that the proposed development will take 9 months to complete (i.e. 36 – 40 weeks).

Construction work will generally be confined to between 08:00 and 19:00 from Monday to Saturday. However, it could occasionally be necessary to work outside of these hours – this would need to be agreed in advance with the local planning authority.

A variety of wastes/spoils are likely to be generated during the construction phase. These will be collected at the end of the construction phase, taken off site, and reused, recycled and disposed of through Thorntons Recycling own facilities.

The facility's construction will lead to construction-related traffic on the roads in the proximity of the development. A detailed traffic management plan will be prepared prior to the commencement of the construction work. An outline traffic management plan to be implemented during the construction phase has been prepared in the interim and is included in Appendix 1 of Volume 3 of this EIS.

A temporary construction site compound will be put in place and will consist of a hardcored area surrounded by secure fencing, comprising a site office, canteen, toilet facilities, storeroom and staff parking areas. Fuel/oil storage areas will be bunded. Temporary toilet facilities in the form of 'portaloo' type chemical toilets will also be required for construction workers.

An outline construction and environmental management plan is included as Appendix 1 in Volume 3 of this EIS. It sets out the key construction and environmental management issues associated with the proposed development. This plan will be developed further at the post-planning and construction stages, by the developer and on the appointment of the main contractor to the project.

2.2.10 Environmental Monitoring and Reporting

Environmental monitoring and reporting will be undertaken in accordance with the required industrial emissions (IE) licence for the facility which will be issued by the EPA. An IE licence application is being made at the same time as the planning application to which this EIS relates.

2.2.11 Description of Natural Resources Used

Natural resources consumed during the construction phase will include:

- Diesel fuel for construction machinery
- Steel in the building construction
- Granular material for use as in-fill material for site development works and in concrete

Natural resources consumed during the operational phase will include:

- Diesel fuel for site machinery (loading shovels, diesel plant) – estimated as 15,000 litres per annum
- Water
- Fuels sources for electricity consumed onsite – estimated annual electricity demand is 6,000 MWhs

2.2.12 Regulatory Control

As identified previously, the proposed development will require the granting of an IE licence by the EPA to reflect the proposed operations. An application is being prepared to the EPA which will be submitted concurrently to the planning application to which this EIS relates.

2.2.13 Decommissioning

In the event that waste acceptance and processing activities at the site end, the applicant will, in keeping with the requirements of the facility IE licence, prepare a decommissioning and residual management plan identifying the action to be undertaken during decommissioning of the facility.

2.2.14 Health and Safety

The proposed facility will be designed, constructed and operated in accordance with the:

- Safety, Health & Welfare at Work (Construction) Regulations 2013
- Safety, Health & Welfare at Work Act 2005
- Safety, Health & Welfare at Work (General Application) Regulations 2007
- Best practice guidelines
- Relevant BREF/BAT guidance
- Facility IE licence

While the proposed development is located with the wider proximity of a number of sites designated as 'Seveso' sites, they are not close enough as to require consultation with the HSA.

3 POLICY

3.1 EU Directives and Policies

The EU Landfill Directive (Council Directive 1999/31/EC on the Landfilling of Waste) contains binding obligations for an EU-wide reduction of the use of landfill as an option for the disposal of biodegradable municipal waste (BMW). Based on the requirements of the Landfill Directive, the EPA applies limit values to the amount of BMW material that can be accepted at landfill facilities in Ireland. The proposed development will contribute towards Ireland's future compliance with our national Landfill Directive obligations. It will do so through the removal of the BMW fraction from MSW and the production of a SRF from MSW, which will help divert BMW from landfill.

A revised EU Waste Framework Directive (Council Directive 2008/98/EC on Waste) was adopted in 2008 which set new recycling targets for EU member states and provided them with a binding obligation to develop national waste prevention programmes and report on waste prevention objectives. The proposed development will contribute to the implementation of the principles of the Directive through the provision of waste disposal and recovery infrastructure which will facilitate the management of wastes generated within the region and nationally.

3.2 Irish Planning and Waste Management Policies

National planning policy, outlined in the National Spatial Strategy and the National Development Plan, is supported by the proposed development through the provision of an effective and efficient waste management facility, which is identified as essential in the promotion of balanced regional development

Current national waste policy, outlined in *A Resource Opportunity*, is supported in a number of ways by the proposed development, through recovery activities including the production of SRF to a specific standard, and through contributions to the achievement of the self-sufficiency and proximity principles.

The national planning and waste management policy documents relevant to the proposed development include:

- National Spatial Strategy 2002 – 2020 (Reviewed in 2010)
- The National Development Plan 2007 – 2013 (revised in 2010 to 2016)
- Waste Management: Changing Our Ways – 1998
- Preventing and Recycling Waste – Delivering Change – A Policy Statement – 2002
- The National Strategy on Biodegradable Waste – 2006
- A Resource Opportunity – Waste Management Policy in Ireland – 2012
- EPA - National Municipal Waste Recovery Capacity – 2014

3.3 Regional Planning and Waste Management Policies

Fingal County Council, being part of the Eastern & Midlands Regional Assembly, contributed to the development of the Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022, which were made in June 2010. Specific statements and strategic recommendations in relation to waste management outlined in these Guidelines are directly relevant to the proposed development. These are summarised in Table 3-1:

Table 3-1: Extracts from the Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022

Policy	Description
PIR 36	The new waste management strategy across the regions of the GDA should seek to facilitate a balanced use of resources and greater adaptability and robustness of services. Integrated waste management should be considered from the perspective of the GDA as one singular functioning economic and spatial unit and to increase economies of scale
PIR 40	Waste management facilities should be appropriately managed and monitored according to best practice to maximise efficiencies and to protect human health and the natural environment.

The Eastern & Midlands Regional Waste Management Plan 2015 – 2021 was made in April 2015 and addresses a number of topics, with Section 4.3 "Residual and Biowaste Exports" and Section 16 "Market Analysis and Infrastructure Planning" being the most relevant in terms of the development proposed at Millennium Business Park.

A significant number of policies are outlined in these sections. Table 3-2 outlines those considered relevant to the proposed development.

Table 3-2: Policies from the Eastern & Midlands Regional Waste Management Plan 2015 – 2021

Policy	Description
A4	Aim to improve regional and national self-sufficiency of waste management infrastructure for the re-processing and recovery of particular waste streams, such as mixed municipal waste, in accordance with the proximity principle. The future application of any national economic or policy instrument to achieve this policy shall be supported.
E1	Future authorisations by the local authorities, the EPA and An Bord Pleanála of pre-treatment capacity in the region must take account of the authorised and available capacity in the market while being satisfied the type of processing activity being proposed meets the requirements of policy E2.
E2	The future authorisation of pre-treatment activities by local authorities over the plan period will be contingent on the operator demonstrating that the treatment is necessary and the proposed activities will improve the quality and add value to the output materials generated at the site.
E15a	The waste plan supports the development of up to 300,000 tonnes of additional thermal recovery capacity for the treatment of non-hazardous wastes nationally to ensure there is adequate and competitive treatment in the market and the State's self-sufficiency requirements for the recovery of municipal waste are met.
E17	The waste plan supports the development of at least 75,000 tonnes of additional biological treatment capacity in the region for the treatment of bio-waste (food waste and green waste) primarily from the region to ensure there is adequate active and competitive treatment in the market. The development of such treatment facilities needs to comply with the relevant environmental protection criteria in the plan.

Policy	Description
E22a	The plan supports the primacy of kerbside source segregated collection of household and commercial waste as the best method to ensure the quality of waste presented.
G3	Ensure there is a consistent approach to the protection of the environmental and communities through the authorisation of locations for the treatment of wastes.
G5	Ensure that the implementation of the regional waste management plan does not prevent achievement of the conservation objectives of sites afforded protection under the EU habitats and Birds Directives.

3.4 Local Policy Context – Fingal County Development Plans

The Fingal County Development Plan 2011 – 2017 was adopted on the 23rd March 2011 and came into effect on the 20th April 2011. The plan outlines the overall strategy for the planning and sustainable development of Fingal County over the period 2011 – 2017. The policies and objectives of the Authority on waste are contained in Section 4.5 'Waste Management'. A number of policies within this Section will be met by the proposed development. These include the development of a waste transfer station in the Kilshane area, the diversion of household waste from landfill and the implementation of objectives with regard to energy recovery.

The Fingal County Development Plan 2017 – 2023 is currently being produced. A Draft version of this plan is available for consultation by the public. A review of the plan commenced on the 20th of March 2015. It is envisaged that this review will take up to two years to complete, with the new Fingal County Development Plan 2017 – 2023 ready for publication and adoption in early 2017. While not yet appropriate to the proposed development, many of the policy objectives in the Draft Plan are similar to those currently in place for the Fingal County Development Plan 2011 – 2017.

4 NEED, ALTERNATIVES & CONSULTATION

4.1 Need for the Development

The need for the development of this facility is influenced by the following factors:

- National and regional legislation and policy in terms of minimisation/elimination of landfill and maximising of recycling and recovery
- Increasing waste generation on a regional and national basis
- Specific demand for SRF production
- Commercial objectives of Thorntons Recycling to manage waste materials under their control in as efficient and cost effective manner as possible

The proposed development supports the maximisation of recycling and recovery in keeping with national and regional policy and legislation. It will provide the required pre-treatment capacity to ensure maximised MSW recovery within the Eastern & Midlands Regional Waste Management region. The current supply of pre-treatment capacity for recovery of MSW in this region is not adequate.

Quantities of waste managed have begun to increase on a national level since 2012. The generation of waste is projected to increase substantially in the Eastern-Midlands Region in the coming years, as well as in other areas of the country. Estimates indicate that MSW generation is projected to increase by roughly 0.9 million tonnes over the next 20 years in Ireland. The proposed development will contribute in the provision of the required treatment capacity for the recovery of increasing quantities of MSW in the coming years.

There is currently an undersupply of SRF nationally versus the licenced capacity available. The proposed development will respond to the increasing demand of the cement industry in producing an SRF to the particular specification required. The Thorntons Recycling Killeen Road facility is a significant SRF producer nationally and this facility shall continue to produce SRF from material accepted there. Having an additional Thorntons Recycling owned facility producing SRF will provide contingency to cement kiln customers in terms of being able to ensure a continued supply in the event of downtime at either facility, while also producing a greater quantity of SRF material overall to satisfy the increasing demand in the coming years.

The development of the proposed facility will be of significant strategic and commercial importance to Thorntons Recycling. It will act as a 'hub' for waste collected and managed by them in Dublin and the surrounding counties. As Thorntons Recycling will not have to haul material to other sites and as large quantities of residual waste will be diverted from landfill, this development will bring both commercial (minimisation of haulage costs and gate fees) and environmental (minimisation of vehicular emissions and generally improved environmental performance) benefits.

4.2 Alternatives Considered

Alternatives in relation to this proposed development are considered in terms of alternative site location, alternative processes at the preferred site and a 'do-nothing' alternative.

While the Millennium Business Park site is broadly comparable to the alternative sites that were considered from an access, services and planning and environmental issues viewpoint, it is preferable due to the lack of capacity in the existing Thorntons Recycling sites to incorporate the proposed development, mainly due to these sites currently operating at physical (footprint) and input tonnage capacity.

As part of the preliminary design process for the proposed development, a number of different facility configurations and layouts were identified by the designers for consideration by Thorntons Recycling. The preferred site layout option was agreed upon by Thorntons Recycling and is as presented in Chapter 2 of Volume 2 of this EIS.

Alternative waste management processes that could potentially be carried out at the Millennium Business Park site were also examined for completeness. The facility at Millennium Business Park may be suitable for development as a dry mixed recyclables (DMR) processing facility or a medium to large scale biological waste treatment facility. However, there is no strategic requirement for the development of further DMR processing capacity or biological treatment capacity by Thorntons Recycling at this time.

In the event of the proposed development not occurring, there will be no infrastructural development at the Millennium Business Park site, which will remain as an undeveloped site within an urban industrial development belt. The proposed waste streams for acceptance will continue to be managed by other means i.e. through existing channels/facilities. A lack of suitable intermediate management capacity may result for future increasing waste quantities.

4.3 EIS Scoping, Consultation& Key Issues

A number of statutory and non-governmental bodies were consulted during the preparation of this EIS. A consultation letter, with accompanying description of the proposed development, site location map and aerial photograph, was sent to 21 statutory bodies, nongovernment organisations and public representatives to inform them of the proposal. A number of submissions were received in relation to the proposed development. The issues raised have been addressed, where practicable, in the relevant sections of the main volume of this EIS.

Dedicated consultation meetings were also undertaken with the Environmental Protection Agency (EPA), ESB Networks and Fingal County Council (FCC) to ascertain their opinions in relation to the proposed development.

In addition, a public information event was held to introduce the proposed development to the public. As no members of the public attended this event, a further request for public comment on the proposed development through written submission was made via a newspaper advertisement. No written submissions were received in response to this advertisement.

Consultation was also undertaken with the Wildlife Licensing department of the National Parks & Wildlife Service (NPWS) as to the potential need for a derogation licence for potential bat roosts, which was confirmed as not being required.

The key issues raised by consultees during the scoping process are outlined in Chapter 5 of Volume 2 of the EIS and addressed in the relevant chapters of the main EIS.

5 THE MAIN IMPACTS OF THE DEVELOPMENT & THEIR MITIGATION

5.1 Impacts on the Human Environment

5.1.1 Population and Settlements

Existing Population and Settlements

The site is located in the townlands of Grange and Cappoge within the Ward Electoral District. The 2011 population in the Ward Electoral District was 8,241, which was an increase of 59.1% since 2006. The nearest major residential zones are Finglas West, located approximately 1.5 km south east of the site, and Corduff, located approximately 2 km south west of the site.

There is one residential dwelling within 500 m of the site. This dwelling is located on the Cappagh Road at a distance of 300 m south east of the site boundary. The site itself is zoned for heavy industry (as per Sheet No. 12 of the Fingal Development Plan, 2011 – 2017). There are a large number of commercial and industrial units within 1 km of the site boundary.

The nearest hospitals to the site are Cappagh National Orthopaedic Hospital, located approximately 1.36 km to the southeast of the site, and James Connolly Memorial Hospital, Blanchardstown, located approximately 2.1 km to the southwest of the site. There are several schools in Finglas, Cabra, Castleknock, Blanchardstown and St. Margaret's. Each school is located at a distance greater than 2 km from the site.

Potential Impacts & Mitigation Measures

Neither the construction nor operational phases of the proposed development will directly impact on the population or settlement patterns in the study area. Therefore, no mitigation measures are proposed. Potential indirect impacts in the vicinity of the proposed development site may arise during both construction and operations from a combination of noise, traffic and air emissions. These impacts, along with the appropriate mitigation measures for them, are summarised at a later point in this document.

5.1.2 Land Use

Existing Land Use

The proposed development site occupies an area of c. 2.4 ha. and comprises a grassed surfaced portion and a tarmacadam hardstanding area, with 2 no. disused building thereon. The land use within the site area to date has been agricultural, light industrial and residential, while it currently remains disused, with unapproved raising of horses having been noted to occasionally taking place on the grassed surface portion of the site in recent years.

Potential Impacts & Mitigation Measures

The proposed development will result in the land use of the site changing from the existing i.e. an area of undeveloped and unmanaged land that comprises a grassed surfaced portion and a gravelled hardstanding area with 2 no. disused building thereon. Following the construction phase, the site will become an area of developed and managed land with one large hardstanding area and a waste management facility thereon.

No mitigation measures are proposed in relation to land use, given the lack of direct and indirect impacts on land-use beyond the development boundary. Within the site boundary itself, mitigation measures provided in relation to the direct impact on the ecology of the area, which is closely related to land-use, are summarised at a later point in this document.

5.1.3 Local Employment and Economic Activity

Existing Local Employment & Economic Activity

Information from the 2011 Census indicated that commerce & trade and professional services are the predominant industry types providing employment to the population of the study area. This suggests that employment is mainly provided beyond the study area, with the local population required to travel to local economic centres such as Dublin city and suburbs for employment.

Potential Impacts & Mitigation Measures

The proposed development will have the direct positive impact of employment creation, with the employment of 40-50 people during the construction phase and c. 9 - 10 people during the operational phase. The operation of the site will also supply the commercial and industrial sector with an outlet for the management of their waste, thus indirectly and positively making the area attractive to industry and contributing to the meeting of regional waste management needs.

No mitigation measures are proposed in relation to local employment and economic activity as the proposed development is considered as having positive, direct and indirect impacts.

5.1.4 Transport Network

Existing Transport Network

The site is bordered to the south by Cappagh Road. The site is located approximately 1 km north of the M50, and approximately 1.8 km west of the N2.

All heavy goods vehicles (HGV) entering and exiting the proposed facility will access the site via the Cappagh Road. There will also be site access point from within the Millennium Business Park which will be used by staff only.

Potential Impacts & Mitigation Measures

The potential direct and indirect construction and operational phase impacts on the local road network and the mitigation measures which will be put in place to limit these impacts, are summarised at a later point in this document.

5.1.5 Utilities

Existing Utilities

A power line transverses the site in a westerly direction. This line is part of the Finglas/Ballycoolin 38kV circuit crossing.

Potential Impacts & Mitigation Measures

This power line and the pylon located within the site boundary will need to be relocated during the construction phase, resulting in a temporary and slight direct impact. No impact on electrical utilities are envisaged in the operational phase of the development while no direct or indirect impacts are envisaged on any other utilities during the construction or operational phase. Electricity consumption during the operational phase will not be excessive when compared to other manufacturing processes.

Given that the impacts arising from the relocation of the power line and pylon on site during the construction phase will be temporary and slight, no specific mitigation measures are proposed, other than those typically undertaken by ESB Networks in such an event, which will include prior notification of impacts to end users.

5.1.6 Recreation, Amenity and Tourism

Existing Recreation, Amenity &Tourism

No recreational activities are carried out at the development location given that it is overgrown scrubland for the most part that is located within a business park.

Potential Impacts & Mitigation Measures

The proposed development will not impact on recreational options, given that none take place on the site and that the site is a functional space for a dedicated waste management activity. It is not anticipated that the construction or operation of the waste management facility will have any direct impacts on tourism in the area. Potential operational and construction phase impacts associated with traffic, noise, air emissions, surface water quality and landscape that could have an indirect impact on tourism in the local area are summarised at a later point in this document.

No mitigation measures are proposed in relation to recreation, amenity or tourism given the lack of direct impacts. Appropriative mitigation measures for the potential indirect impacts associated with traffic, noise, air emissions, surface water quality and landscape are summarised at a later point in this document.

5.2 Impacts on Air Quality and Climate

5.2.1 Existing Air Quality & Climate

Climate in the Existing Environment

Data for localised climatic conditions has been derived from meteorological measurements at the Dublin Airport synoptic station. Data from Dublin Airport indicates that the mean air temperature is approximately 9.7 °C. The average wind speed and direction indicates that the prevailing winds are south westerly, with a mean wind speed of 12.8 knots.

Air Quality in the Existing Environment

The Millennium Business Park is located in the EPA air quality management area of Dublin (Zone A) and air quality is as per that of the wider Dublin area, measured for the Dublin zone. Dust deposition monitoring carried out onsite indicated dust deposition as being within relevant guidance at 2 of 3 monitoring locations onsite, but with elevated dust deposition seen at one location, adjacent to the Kilsaran Concrete batching operation. A baseline odour assessment undertaken in accordance with the EPA publication *Odour Impact Assessment Guidance for EPA Licensed Sites (AG5*), indicates no odour generation in the vicinity of the development site.

5.2.2 Potential Impacts - Climate

The proposed development will facilitate regional and national recovery and recycling targets by providing required waste management infrastructure. This will positively, albeit minimally and indirectly, contribute to the achievement of national commitments regarding climate change. As it is not envisaged that there will be negative impacts on the climate as a result of the proposed development, no mitigation measures are proposed.

5.2.3 Potential Impacts – Air Quality

Dust Emissions

An assessment of likely dust emissions from the construction phase of the proposed development, undertaken according to UK Air Quality Guidance, indicated that there is no considerable risk from these emissions. The risk posed from the demolition and trackout activities to take place on site was deemed to be negligible, while the risk posed from the earthworks and construction activities to take place on site was deemed to be low.

An assessment of likely dust emissions from the operational phase of the proposed development, undertaken according to National Roads Authority Guidance, indicated that the risk from these emissions is negligible. This is primarily due to there being a large separation distance between the development and nearby receptors.

Vehicle Emissions

Predicted vehicle emissions associated with the proposed development during both the construction and operational phases are comfortably within the relevant air quality guidelines and will have only a *negligible* direct impact on ambient air quality.

Odour Emissions

No odour generation will be associated with the construction phase of the proposed development.

The biowaste and municipal waste material proposed to be accepted at the facility during its operation have the potential to generate some localised odour with a negative impact, the magnitude of which will be dependent on a number of factors, including the degree of degradation, the duration of storage of the material prior to acceptance at the facility and the duration of storage of the material at the facility location itself.

Cumulative Impacts

Given the location of the proposed development within the Millennium Business Park, with the existing adjacent quarrying, waste management and concrete batching operation which are ongoing, potential cumulative impacts resulting from dust during the construction phase have the potential to directly result in localised increases in dust, given the existing elevated localised dust level at the northern boundary of the site.

Cumulative dust impacts resulting during the operational phase of the development are considered to be negligible, given the nature of the proposed activities at the development location.

In relation to vehicle emissions, existing traffic levels are considered in the DMRB model undertaken, with the proposed development associated construction and operational traffic included therein, therefore potential cumulative impacts are considered, given that the existing traffic levels capture traffic levels associated with other developments within the locality, with these having been identified as negligible.

Potential cumulative impacts in relation to odour have been assessed in the standalone odour modelling assessment included in Appendix 9 of Volume 3 of this EIS. Consideration is given to the potential cumulative impact of potential odour emissions from the Greenstar waste transfer and processing facility (W0183-01) located c. 100m north of the development site boundary and the Panda Recycling materials recovery facility (W0261-02) located c. 150 m south of the proposed development site.

The assessment undertaken indicates that there is no contribution from the proposed development in terms of potential cumulative odour concentration and thus no cumulative impact is identified.

5.2.4 Mitigation Measures – Climate

As it is not envisaged that there will be any negative impacts on the climate as a result of the proposed development, no mitigation measures are proposed.

5.2.5 Mitigation Measures – Air Quality

Dust Emissions

Mitigation measures to be implemented during the construction and operational phases are outlined in detail in Volume 2 of this EIS. Examples include the development and implementation of a dust management plan, the recording of and response to dust complaints received, the completion of weekly dust inspections, the implementation of a maximum speed limit of 15 km/h on facility roads and the availability of an adequate water supply for effective dust suppression.

Following the implementation of mitigation measure, no adverse impacts on receptors will arise from dust generation. The residual effects of dust generation at the site are considered to be 'not significant.'

Vehicular Emissions

No mitigation measures are required in relation to vehicular emissions.

Odour Generation

No mitigation measures for odour are proposed for the construction phase of the proposed development.

Potential odour emissions during the operational phase will be mitigated through the following measures:

- minimisation of the handling of waste that is potentially malodorous
- handling of potentially malodorous waste within the enclosed waste reception and processing building under negative aeration and the treatment of captured air through an appropriate abatement system, which will be an activated carbon based, or similar media, system.
- the use of covered or enclosed vehicles for the transportation of waste
- carrying out regular monitoring and inspections for odour

5.2.6 Residual Impacts

In relation to dust generation, with the implementation of the mitigation measures outlined, particularly during the construction phase, no notable adverse impacts on receptors will arise from dust generation and the residual effects of dust generation at the site are considered to be negligible.

No residual impact on the micro or macro climate are envisaged as a result of vehicle emissions.

In relation to odour, the utilisation of an abatement system, resulting in emissions of the odour concentrations identified thorough the stack height identified, will result in offsite odour concentrations comfortably within applicable guidance levels, with no residual impact occurring.

5.3 Impacts on Roads, Traffic and Transportation

5.3.1 Existing Road Network

The proposed development site is bordered to the south by the L3080 Cappagh Road, a Local Primary Route running between Finglas and Hollystown. The site is located approximately 1 km north of the M50, and approximately 1.8 km west of the N2. Increased traffic movements on the existing public road network will occur as a result of the proposed development during the construction, operational and decommissioning phases.

Based on traffic count analysis undertaken as part of the EIS, the Cappagh Road is assessed as having an existing AADT of 5,369.

5.3.2 Potential Impacts - Construction Phase

During the construction phase, increased traffic movements will arise from:

- Heavy Goods Vehicles (HGVs) transporting materials to the site
- HGVs transporting excavated material and demolition material from the site.
- HGVs transporting conventional earthworks machinery such as excavators, dumper trucks, rollers etc.
- Fuel trucks transporting fuel (for plant) to the site
- Light goods vehicles (LGVs) such as cars, 4x4s and vans used by the workers and supervisory staff involved in the construction works
- Upgrade of the existing entrance junction off the Cappagh Road to enable HGV movements to the site

A construction traffic appraisal has indicated that a maximum of 53 additional trips per day will arise as a result of the construction works. This will result in a negligible, temporary direct impact on the local road network, which will be comfortably accommodated.

The upgrade to the site entrance from the Cappagh Road has the potential to result in a temporary, direct impact in the form of lane restriction and/or temporary traffic light installation, for the duration of the site entrance upgrade, which is estimated at approximately 2 weeks. Works on the site entrance, foul and storm drainage systems and utilities and drainage connections within the Millennium Business Park will result in minor disruption along the existing Millennium Business Park internal roads.

5.3.3 Potential Impacts - Operational Phase

The traffic associated with the operational phase of the facility will comprise of personnel working at the facility, visiting contractors, maintenance personnel and others, and HGVs delivering and removing materials from the site. LGV movements (staff, contractors, etc.) will access the facility via the Millennium Business Park entrance, whereas HGV vehicles will access it via the upgraded entrance from the Cappagh Road.

It is anticipated that materials will be delivered and removed from site over a 24-hour period, and that approximately 84% of the HGV movements will occur in the hours 6 a.m. to 9 p.m. with the remaining 16% occurring between 9 p.m. and 6a.m.

A traffic appraisal has indicated that there will be 199 trips made per day during the operational phase. This will include an average of 146 HGV movements during the day time, 28 HGV movements during the night time and 25 daily staff movements. The addition of 199 trips per day would see daily traffic on the Cappagh Road rise by 3.7%, with HGV movements on this road increasing by 16.9%.

Traffic associated with the operational phase of the development will have a direct, slight and permanent (for the duration of the development lifetime) impact on the local road network, when considered in terms of overall traffic increases, and will have a direct, moderate and permanent impact when considered in terms of increased HGV traffic.

The upgraded site entrance junction on the Cappagh Road which is proposed so as to allow for HGVs to turn right into the facility was examined using a specific analysis software. This analysis concluded that there will be no impacts as a result of potential queuing in the right-hand turning lane on the Cappagh Road.

5.3.4 Potential Impacts - Decommissioning Phase

The decommissioning phase could result in some additional traffic movements on the local road network, which are expected to occur over an extended period of time. The increase in traffic movements on the Cappagh Road, when compared with the construction or operational phase, are negligible.

5.3.5 Potential Cumulative Impacts

Cumulative impacts could result when the proposed development traffic is considered in relation to the existing industrial facilities in the vicinity of the development location. However, as the existing facilities currently utilise the surrounding road network, any traffic movements associated with these developments have been captured as part of the existing traffic environment, and therefore assessment on impacts on the existing environment have considered the cumulative.

5.3.6 Mitigation Measures

Construction Phase

The design of the new entrance to the site from the Cappagh Road will mitigate against potential impacts. Haulage Routes have also been selected so as not to result in large traffic increases on roads with light traffic usage. A detailed Traffic Management Plan (TMP) will be produced prior to construction works commencing at the site. The TMP will result in the implementation of a number of mitigation measures, including the appointment of a Traffic Management Coordinator, the identification of roads to be used and not to be used, the completion of a pre and post construction survey on roads and the maintenance of road cleanliness.

By adopting the mitigation measures proposed above, the additional traffic associated with the construction is anticipated to have a direct slight short term negative residual impact on the road network and its users.

Operational Phase

The primary mitigation measure for the operational phase is the construction of the new entrance on the Cappagh Road which will facilitate easy access to the development site.

A number of additional mitigation measures will be implemented, including the provision of traffic management site inductions to all staff working onsite and the use of clear signage.

Decommissioning Phase

No specific mitigation measures, are required in relation to decommissioning of the facility.

5.3.7 Residual Impacts

By adoption of the mitigation measures proposed, the additional traffic associated with the construction works is anticipated to have a direct slight short term negative residual impact on the local road network and its users.

With the implementation of the mitigation measures outlined above for the operational stage, it is anticipated that the development will have a slight permanent impact on traffic on the Cappagh Road.

5.4 Impacts on Noise and Vibration

5.4.1 Existing Noise Environment

A baseline noise survey was conducted to quantify the background and ambient noise levels in the vicinity of the proposed development. Three noise monitoring locations were identified for obtaining a detailed representation of the ambient and background noise levels in the vicinity of the proposed development. Noise measurements were conducted at each of the three monitoring locations during daytime (07:00 – 19:00 hrs); evening (19:00 – 23:00 hrs) and night-time (23:00 – 07:00). Some exceedances of relevant guidance values were observed which were attributed to noise from neighbouring industrial sites and traffic noise on the Cappagh Road.

5.4.2 Potential Impacts - Construction Phase

Noise during the construction phase will arise from site clearance and preparation works, building construction, installation of plant, road works, service works and landscaping. Noise modelling undertaken as part of this assessment indicates that noise levels are predicted to be below the relevant construction noise limit criterion, with the implementation of mitigation measures.

5.4.3 Potential Impacts - Operational Phase

Noise during the operational phase will arise from activities within the waste processing building and traffic movements (notably the HGVs) to and from the site and in the site yard. It is proposed that the facility will operate on a 24/7 basis. Noise levels at twelve receptor locations during the operational phase were modelled, with the results indicating that all locations will be compliant with the EPA's daytime, evening and night-time noise limits. There will be little difference in noise levels resulting from the extra traffic on the Cappagh Road during the operational phase.

5.4.4 Potential Cumulative Impacts

Cumulative impacts could result when the proposed development noise is considered in relation to the existing industrial facilities in the vicinity of the development location.

However, given that the adjacent facility are currently in operation, these sources will be present in the existing baseline environment and therefore the noise impact assessment, in addition to the baseline, considers the cumulative therein.

5.4.5 Mitigation Measures

Construction Phase

Mitigation measures for noise during the construction phase will be put in place to limit impacts. The noise control measures set out in the Construction Environmental Management Plan (CEMP) will be implemented. These include the restriction of construction operations during unsociable hours, the appointment of a site representative for noise matters and the completion of noise monitoring at noise sensitive receptors during critical periods. Further, more general noise mitigation measures will also be taken during construction.

The additional traffic on the Cappagh Road will result in a negligible increase in noise levels at noise sensitive locations. This impact will be mitigated against by generally restricting movements along access routes to the standard working hours and excluding Sundays, unless specifically agreed otherwise.

Operational Phase

Mitigation measures for noise during the construction phase will be put in place to limit impacts. These will include the adequate maintenance of plant and equipment, ensuring that noisy plant and equipment are not used for long or at inappropriate times, carrying out regular noise monitoring in accordance with the facility EPA noise limit values, ensuring that building doors are kept closed and investigating and recording all noise complaints.

5.4.6 Residual Impacts

With the implementation of the identified noise mitigation measures, no significant noise impacts are expected as a result of the construction or operational phases of the proposed development.

5.5 Impacts on Flora and Fauna

5.5.1 Existing Ecology

The South Dublin Bay and River Tolka Estuary Special Protection Area (SPA) and six proposed Natural Heritage Areas (pNHA) are located within 10 km of the proposed development. No Candidate Special Areas of Conservation (cSACs) or Natural Heritage Areas (NHA) are located within 10 km of the site.

The habitats identified on site during surveys were dry meadows and grassy verges, ornamental/non-native scrub, spoil and bare ground, recolonising bare ground, treelines, buildings and artificial surfaces. No rare or protected flora species were recorded during surveys. However, four such species have been recorded in the past within the 10 km grid square in which the proposed development is located.

One highly invasive species, the Japanese knotweed (*Fallopia japonica*), noted on Invasive species Ireland's 'most-unwanted list', was recorded along the eastern boundary of the site during surveys. The underground rhizomes of this highly invasive plant can extend up to 7 meters from the parent plant and up to 3 meters in depth.

Butterfly bush (*Buddleja davidii*) and sycamore (*Acer pseudoplatanus*) were also noted within the site boundary. A further five invasive species have been recorded in the past within the 10 km grid square in which the proposed development is located, but were not noted during the surveys.

A desktop survey indicated that nine species of bats have been recorded within 10 km of the proposed development. A bat activity survey was carried out in July 2016. Only one species of bat was recorded over the course of this survey; the Leisler's bat (*Nyctalus leisleri*). The species was recorded feeding along the treeline in the centre of the site. The ivy covered trees offer potential roosting habitat for the bat species. The disused former residential dwelling was considered to offer potential roosting habitats for bats while the disused storage building within the site boundary was considered to be of low value to bats upon inspection. A further survey was carried out in September 2016 at the site following a fire at the disused former residence that did not show any signs of bats.

A number of protected native mammal species, including the hedgehog (*Erinaceus europaeus*) and the Irish stoat (*Mustela erminea*), were recorded from a desktop study of the 10 km square grid in which the proposed development is located. Both red fox (*Vulpes vulpes*) and European rabbit (*Oryctolagus cuniculus*) were observed on site on the evening of a survey carried out in July 2016. There are several records of these species within the surrounding area.

Four green listed bird species (of favourable conservation status) were identified within a 2 km grid square encompassing the proposed site, with one of these species, the Peregrine Falcon (*Falco peregrinus*), identified as an Annex I species under the Birds Directive (Directive 2009/147/EC). A total of 13 bird species were either observed or heard calling during an ecological survey completed in July 2016. One of these species, the herring gull (*Larus argentatus*), is a red listed species that is of global conservation concern. This species was noted flying over the site during surveys. However, the habitats within the site are considered to be of very low value for the species.

5.5.2 Potential Impacts – Construction Phase

There are no designated European sites or proposed Natural Heritage Areas (pNHAs) within the proposed development area. As there are no waterways or ditches draining the proposed development, the designated sites and pNHAs nearby the development are not hydrologically connected. Therefore, no direct or indirect impacts as a result of hydrological changes are envisaged. This verified by the standalone Appropriate Assessment Screening Report (included as Appendix 17 in Volume 3 of this EIS) which identified no potential for significant effects on European sites.

The loss of the dry meadows and grassy verges habitats, which account for 55.31% of the study area, is considered to be a *slight long term impact*, as these habitats have a reduced ecological value due to them being surrounded by built up areas and having a resultant lack of connectivity to more semi-natural habitats. Other habitats that will be lost are modified and of lower ecological value. The disused buildings on site are of higher importance due to their use as nesting sites for barn swallow. If demolition of these buildings was carried out during the breeding period, this could have a potentially significant impact on the barn swallow if demolition was carried out during the breeding season.

A length of approximately 183 m of treeline shall be lost as part of the proposed development. The resultant loss is considered to be a *slight long term impact,* as it offers potential foraging habitat and shelter for bats, birds, small mammal and invertebrates. A dead tree along the treeline was identified as a potential bat roost during the bat survey. The loss of this habitat if inhabited could result in a *significant impact*.

While the site is considered to be of relatively low value for mammals overall due to its isolation, a number of impacts are possible. A dead tree along within the site was identified as a potential bat roost during the bat survey. The loss of this habitat if inhabited could result in a *significant impact*.

Foraging or commuting bats may suffer disturbance impacts during the construction works through increased noise and lighting on the site.

The main potential source of impacts on birds will be as a result of vegetation clearance works and the associated loss of habitat. As the habitats within the site are of low value for the bird species identified to be using the area, no significant impacts are envisaged.

However, should the construction work be carried out during the nesting and/or breeding season a significant impact on bird species nesting and/or breeding in the site may result.

No impact is envisaged to aquatic species and habitats during the construction phase as the proposed development site does is not located adjacent to or within the catchment of a watercourse or drainage ditch.

5.5.3 Potential Impacts – Operational Phase

The operational phase will have a lesser potential impact on the local ecology than the construction phase. There shall be no further habitat loss during the operational phase of the proposed project, and therefore no further impacts on habitats.

No resultant impacts are envisaged upon designated sites following the construction of the development. Foulwater generation during the operational phase of the development will have a negligible impact on any wastewater treatment plant to which it flows, in terms of loading of the plant.

The primary potential impact from the proposed development is an increase in runoff from the site, which may have a direct, adverse effect on flooding downstream of the site. It is proposed to construct hardstanding areas and buildings over the majority of site, leaving small areas open to landscaping, which will result in an increase in run-off from the site. This increase in the rate of surface water runoff will be attenuated in the proposed attenuation facility, to be installed as part of the surface water drainage system.

The potential impact on terrestrial fauna during the operational phase of the project will be *imperceptible*, as the habitats within the site are of low ecological value.

While the increase in the use of artificial street lighting within the site could result in the avoidance of illuminated sections of the site by bats, it is considered that any negative impact to bats during the operational phase of the project will be *slight*.

The site is generally of low value for bird species. As a result, any negative impact to birds during the operational phase of the project will be *imperceptible*.

It is not expected that adjacent developments will have any significant potential cumulative impact with the proposed development for a waste processing and transfer facility at Millennium Business Park, in particular given the proposed drainage design which will treat and limit surface water flows from the proposed development.

5.5.4 Mitigation Measures

Mitigation measure during construction of the proposed development will be employed to protect against potential impacts on habitats, flora & fauna and water quality. A project ecologist will firstly be appointed to oversee all works. He/she will have the authority to stop construction activity should it have the potential to result in significant adverse ecological impacts.

To minimise disturbance to habitats and flora, the area of the proposed works will be kept to the minimum necessary. An Invasive Species Management Plan has been put in place as part of the planning application for the proposed development so as to ensure the appropriate management of the Japanese knotweed (*Fallopia japonica*) that has been recorded adjacent to the site boundary. Regular ecological walkover surveys shall be undertaken by the project ecologist to examine the area for newly established invasive species.

To minimise disturbances to mammals, construction operations will take place during daylight hours to minimise disturbances to faunal species at night. Toolbox talks shall be given to all construction staff entering the site to ensure that they are made aware of the potential impact to badgers and the local ecology of the site. The conditions of the bat derogation licence for the site will be adhered to in full.

Mitigation measure in relation to bats will include the installation of bat boxes in the north eastern and northern corner of the site, prior to any works commencing onsite. Trees and buildings onsite will be examined for bat activity or presence of bats, while lighting shall be kept to a minimum.

The removal of vegetation and scrub will be undertaken outside of the bird breeding season (March 1st to August 31st inclusive) so as to protect nesting birds. The demolition of the buildings containing breeding birds will also not occur during the breeding season. Construction operations will take place during the hours of daylight to minimise disturbances to roosting birds, or active nocturnal bird species.

A number of measures will be taken to minimise impacts on water quality during the construction phase. Examples include the immediate removal of vegetation from the site following clearance, the storage of any diesel or fuel on site in bunded areas and the use of a lock system on all taps, nozzles or valves utilised.

Operational mitigation measures relating to ecology are centred on the minimisation of potential hydrology and water quality impacts and include the installation of a class 1 full retention interceptor, installation and a SuDS compliant attenuation structure (comprising permeable paving with Aquacell or equivalent) and discharge of foulwater to the wider Business Park drainage system, with trash screens and filters to prevent any solid waste from discharging to this network.

5.5.5 Residual Impacts

With the implementation of the above mitigation measures, the proposed development will result in an overall *imperceptible* to *slight* negative residual impact on ecology.

5.6 Impacts on Soils, Geology & Hydrogeology

5.6.1 Existing Soils, Geology & Hydrogeology

The bedrock beneath the site comprises Carboniferous Limestone. The subsoils comprise predominantly glacial till derived from limestone bedrock. Approximately 100 m to 200 m east and west of the site, bedrock is shown to be present at, or close to the ground surface.

Structurally, the Carboniferous rocks of the area are crossed by a series of northeast-southwest trending faults which are in turn dissected by a series of northwest-southeast trending faults. One of these latter faults is shown on the geological map of the area to run close to the eastern boundary of the site.

The Huntstown Quarry, a geological heritage feature and a site of high potential for crushed rock aggregate, is located adjacent to the eastern boundary of the site.

A Locally Important Aquifer underlies the site. No groundwater wells are located within 1 km of the site boundary. The overburden deposits of glacial till are generally of low permeability, with the assessed groundwater vulnerability for the site being classified as high.

5.6.2 Potential Impacts

Soils, geology and groundwater may be impacted from a number of on-site activities. Examples include the removal of topsoil and subsoil leading to a greater exposure of the subsoil to erosion, the removal of glacial till leading to an increase in the vulnerability of the underlying aquifer to contamination, the compaction of soil due to construction traffic leading to increased runoff and erosion and the occurrence of chemical pollution from the spillage or leakage of chemicals leading to an increased risk of groundwater contamination.

The magnitude of the above potential impacts, prior to mitigation, is considered to be of slight significance.

5.6.3 Mitigation Measures

With regard to the proposed development, detailed design best practice will be implemented. Examples of such best practice include the use of a suitably qualified and experienced geotechnical engineer or engineering geologist and the completion of a design risk assessment and method statement for all works.

A number of mitigation measures will be taken to reduce impacts on soils and geology from the proposed development. All excavations will be constructed and backfilled as soon as possible to mitigate against erosion. Refueling of machinery and plant will only occur off site to mitigate against possible contamination. Temporary stockpiles will be covered overnight to prevent erosion and sedimentation. Temporary cuts/excavations will be adequately supported and protected against the ingress of water or erosion.

The nature of the proposed facility poses a low risk to groundwater, with no significant quantities of potentially contaminating material stored on the site. All materials brought on site will be stored in designated impermeable concrete hardstanding areas breaking any potential pathway.

Diesel for any site based equipment will be stored in a bunded area to prevent run-off, with a designated hard-standing fill area for re-fueling also in operation.

5.6.4 Residual Impacts

Residual impacts on soils, geology and hydrogeology after implementation of the above mitigation measures proposed are predicted to be *imperceptible*.

5.7 Impacts on Surfacewater Quality and Drainage

5.7.1 Existing Surfacewater and Drainage

The proposed development site is located across one waterbody catchment; the Tolka River catchment. The site lies within the catchment of the Bachelors Stream, a tributary to the Tolka River. The Bachelors stream runs parallel to the N2 Roadway as far as Glasnevin where it joins the Tolka River.

The Environmental Protection Agency (EPA) identifies that the Tolka River is currently of ‘Bad’ status. The waterbody is designated as ‘At Risk’ due to risks from point and diffuse sources. It is an objective to restore the status of this waterbody to ‘Good’ by 2027.

OPW Provisional Flood Risk Assessment (PFRA) mapping shows that there are no areas of the site which are subject to fluvial flooding as there are no watercourses in close proximity to the site location. The Bachelors Stream, towards which the site ultimately drains (via overland flow, culverts and road drainage systems), is identified as susceptible to fluvial flooding in PFRA mapping in the vicinity of Finglas. A more detailed pluvial study, the Dublin Pluvial Study (FloodResilienCity) predicted that 1 in 100 year return period (Flood Zone A) pluvial flooding would occur on site at depths of up to 0.5 m in places.

The site currently falls very gently from south to north with a c. 0.5 - 1m gradient across the site. Incident runoff is likely to percolate through to groundwater and flow towards the eastern site boundary in the direction of the adjacent Huntstown quarry. No drainage system currently exists on site. The eastern portion of the site contains a gravel hardstanding with a similar gradient as the wider site. The remainder of the site is greenfield and is considered to be of high permeability.

5.7.2 Potential Impacts – Construction Phase

The potential direct and indirect impacts relating to surface water runoff and water quality, as a result of activities during the construction phase are as follows:

- Contamination of surface water from wet concrete operations and/or fuel spillages/leaks;
- Releases of silt and suspended solids to surface waters from tree felling, inappropriate management of excavation work, inappropriate management of temporary stockpiles and a failure to ensure wheels on vehicles leaving the site are free of earth and mud;
- Pluvial flooding which could cause ponding on the site and excess water in excavations or trenches

5.7.3 Potential Impacts – Operational Phase

During the operational phase, the primary potential impact is an increase in runoff from the site, which may have a direct, adverse effect on flooding downstream of the site.

Construction of hardstanding across the majority of the site will result in an increase in run-off. However, this will be catered for by the proposed attenuation facility, to be installed as part of the surface water drainage system.

In addition to the increase in runoff from the site, the following additional potential impacts may occur:

- An uncontrolled release of leachate run-off from the waste material stored within the waste processing building may enter a surface water drain causing adverse effects to the water quality
- Solid waste material may be washed into the foul water drainage system causing a blockage
- There is a risk of a fuel or oil spillage from the plant or HGVs to the surface water drainage network of the site, which could adversely affect water quality
- A blockage in the surface water drainage system may generate a risk of surface water flooding

5.7.4 Potential Cumulative Impacts

The potential for cumulative impacts resulting from the proposed development in combination with existing facilities in the wider locality was assessed and the potential cumulative impact on hydrology and water quality are considered to be negligible.

5.7.5 Mitigation Measures – Construction Phase

A large number of mitigation measures relating to surface water and drainage will be implemented during the construction phase so as to protect the receiving waters from potential adverse impacts. These mitigation measures are outlined in detail in Volume 2 of this EIS. Examples include the use of a dry wheel wash at the entrance to the site to prevent mud being carried onto the Cappagh Road, the surrounding of excavated material with silt fencing to prevent runoff, the containment of wet concrete operations, the refueling of plant within designated refueling areas and the training of all personnel working on site in in pollution incident control response.

5.7.6 Mitigation Measures – Operational Phase

The drainage system on site will represent the primary mitigation measure for surface water and drainage during the operational phase. An interceptor and silt trap will be incorporated into this system to treat surface water runoff prior to discharge to the Millennium Business Park drainage system. The drainage system will be inspected and maintained on a regular basis to ensure that it is operating effectively.

In order to prevent an increase in runoff from the site during the operational phase, the constructed attenuation structure will ensure that surface water flows to the drainage system will not increase beyond those of the current undeveloped greenfield runoff rate.

A spillage containment plan will be put in place at the site with spill kits being made available and personnel being trained in spillage response procedures to ensure that any uncontrolled releases are contained.

5.7.7 Residual Impacts

Following the implementation of the above mitigation measures, the residual risk to the receiving watercourses will be negligible during both the construction and the operational phases.

The potential for pollution from the facility is reduced significantly through mitigation measures which protect surface water flows during the construction phase and avoid contamination of the drainage system during the operational phase.

The potential for downstream flooding due to the increased amount of hardstanding is reduced by the implementation of rainwater harvesting, permeable paving and the attenuation tank structure.

5.8 Impacts on Landscape and Visual Assessment

5.8.1 Existing Landscape

The proposed development site within the Millennium Business Park is located with a ‘Low Lying Agricultural’ Character Type, as per Sheet No.14 of the Fingal County Development Plan 2011 – 2017, and is of modest value and low sensitivity.

This Character Type is identified in the Plan as being “*characterised by a mix of pasture and arable farming on low lying land with few protected views or prospects. The Low Lying Character Type has an open character combined with large field patterns, few tree belts and low roadside hedges”.*

The visual envelope is the extent of potential visibility of the site to or from a specific area or feature. The visual envelope for the development location is defined by:

- views along the local Cappagh Road when approaching the site from a southerly direction.
- views from within the Millennium Business Park directly north of the development location
- views form the Rosemount Business Park 300 – 400 m to the east of the development location
- views from the Roadstone Huntstown Quarry directly east of the site location

The Fingal County Development Plan 2011 – 2017 identifies a number of views and prospects, identified as being particularly "*along the coast, the river valleys and the upland area to the north along the border with County Meath"* with objectives presented to ensure these views and prospects are protected.

The nearest amenity view to the proposed development are those along the 'Strawberry Beds' within the Liffey Valley Special Amenity Area, located some 5 km south west of the proposed development location.

5.8.2 Potential Impacts

The proposed development will involve the construction of a waste processing building, a bale storage building and facility administration building. In general terms, the height of the tallest proposed structure, the waste processing building, at 12 metres above ground level, and the proposed stack of 20m in height, are of considerable height, but it is not out of context with the existing buildings located within Millennium Business Park, particularly the adjacent Keegan Quarries & Kilsaran concrete batching plant.

To determine the visual impact on the facility, five viewpoints were selected for detailed assessment. Of the five viewpoints assessed, each of which is identified as being of low sensitivity, no impact is seen at two locations while impacts of low significance only are seen at the three other viewpoint locations.

5.8.3 Mitigation Measures

Given the low level of impacts identified, it is not considered that there is a requirement for significant or particular mitigation measures to be applied. However, it can be considered that mitigation has been considered in a 'mitigation by design' approach, through ensuring that the coloration of the waste processing building cladding is appropriate and through the implementation of landscaping measures along the southern boundary of the development site.

5.8.4 Residual Impacts

No significant residual impacts are envisaged after mitigation as outlined.

5.9 Impacts on Archaeology, Architecture and Cultural Heritage

5.9.1 Existing Environment

There are no Recorded Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens within the proposed development area. There are 7 no. Recorded Monuments and 2 no. Protected Structures within 1 km of the proposed development

5.9.2 Potential Impacts

There will be an *imperceptible* impact on the 7 no. Recorded Monuments and 2 no. Protected Structures within the 1 km study area during both the construction and operational phases.

Should any previously unrecorded archaeological remains exist within the development area, there may be a direct impact on these during the construction phase.

5.9.3 Mitigation Measures

There are no mitigation measures available to offset the imperceptible visual and noise impact on the archaeological, architectural and cultural heritage resource during the construction and operational phases.

Excavations carried out as part of the construction works will be monitored by site supervision staff, and if in the event that any archaeological remains are uncovered, all works on site will cease immediately and an archaeologist will be retained to survey the findings and make recommendations for the progression of the construction works.

5.9.4 Residual Impacts

There will be an *imperceptible* residual visual and noise impact on the archaeological, architectural and cultural heritage resource.

5.10 Impacts on Material Assets

5.10.1 Existing Material Assets

The Finglas–Ballycoolin 38 kV power line traverses the site, both overground and underground. A 12 m tower is located right of centre on site. A medium voltage (MV) electricity supply line also transverses a small area of the site, at its south-east corner. Underground medium voltage cables run outside the western boundary within the Millennium Business Park to an existing sub-station and parallel to the southern boundary, along the Cappagh Road, providing a connection point to the existing, disused residential dwelling on the site.

A medium pressure gas main runs directly along the south boundary of the site, parallel to the Cappagh Road. A water main line runs parallel to the western boundary of the site to facilitate future water connection.

Thorntons Recycling has full ownership of the site area in which the proposed development is located. Access to the site is via two existing entrances from the Cappagh Road and through the Millennium Business Park.

The Huntstown Quarry is located adjacent to the eastern boundary of the site. No wind or solar energy facilities are located in proximity to the site.

5.10.2 Potential Impacts

There is a perception that property values will be depressed by the proximity of a waste facility. As there are no residential properties located in the immediate vicinity of the proposed development and given the location of an existing waste management facility and quarry directly adjacent to the development site, direct or indirect impacts on property values in the wider locality due to the proposed development are not predicted.

Direct impacts on electrical utilities resulting from the construction phase will be temporary and slight and will be associated with works that will be undertaken by EBS Networks in relation to relocation of the existing 38 kV power line that transverses the site. No impact on electrical utilities are envisaged in the operational phase of the development while no direct or indirect impacts are envisaged on any other utilities during the construction and operational phases.

There will be no direct or indirect impacts on ownership of the site as Thorntons Recycling will retain full ownership of the development site. A positive direct impact will result due to the upgraded site access.

There will be no additional requirements for non-renewable resources and no direct or indirect impacts on same. The proposed development will not impact potential future renewable resources in the vicinity of the site.

5.10.3 Mitigation Measures

There is no requirement for mitigation measures in relation to material assets as it is considered that the proposed development will not impact in any significant manner on the existing material assets in the surrounding environment. Mitigation measures, in terms of prior notice to electricity users impacted by the powerline relocation, will be undertaken in ESB Networks separately.

5.10.4 Residual Impacts

Residual impacts on materials assets due to the proposed development are considered to be *negligible*.

6 INTER-RELATIONSHIPS & INTERACTIONS

The proposed development to develop a materials processing and transfer facility for the acceptance, processing and transfer of up to 170,000 tonnes per annum of residual municipal solid waste (MSW), source separated organic material i.e. 'brown bin' waste, waste wood and green waste, from both domestic and commercial sources, has the potential to cause both positive and negative impacts on the environment. Potential impacts resulting from the development (prior to mitigation) are identified as follows:

Potential Negative Effects

- increased noise levels during Construction phase
- increased noise levels during Operational phase
- increased traffic levels during Construction phase
- increased traffic levels during Operational phase
- potential for dust generation during Construction phase
- potential for odour generation during Operational phase
- impact on existing ecology of the site during Construction phase
- potential impact on surface water quality during Construction phase
- potential impacts on surface water quality during Operational phase

Potential Positive Effects

- provision of appropriate waste management infrastructure to support national and regional waste management policy and the concepts of self-sufficiency, proximity and the waste hierarchy
- employment provision & demand for goods and services

Although separate and unrelated to the proposed development, other developments in the vicinity of the site could have the potential to impact on the environment on a greater scale than the proposed development alone, when considered in combination with the proposed development. These potential combined cumulative effects have been considered in a number of sections in the EIS, namely air quality & climate, roads, traffic & transportation, noise and surfacewater & drainage.

Table 6.1 summaries the impacts of the proposed development on each environmental aspect. Any adverse impacts are primarily localised in their extent and their significance can be described as slight.

Table 6.2 outlines the interactions between the proposed development and the other developments when considered under the cumulative topics identified.

Table 6-1: Summary of Relative Significance of Impacts with and without Mitigation

Topic Area	Description of Impact	Geographical Scale					Potential Impact	Duration	Significance Without Mitigation	Significance With Mitigation
		I	N	R	C	L				
Human Beings	Landuse					x	Neutral	Pe		-
	Employment generation				x	x	Positive	St – Mt	Slight	Slight
	Amenity and Tourism				x	x	Neutral	Lt	-	-
Transportation	Construction Phase Traffic					x	Adverse	Tp	Moderate	Slight
	Operational Phase Traffic					x	Adverse	Mt	Moderate	Slight
Noise	Construction phase noise					x	Adverse	Tp	Moderate	Slight
	Operational phase noise					x	Adverse	Mt	Moderate	Slight
Ecology	Impacts on designated areas			x	x	x	Neutral	St – Mt	Imperceptible	Imperceptible
	Impacts on flora and fauna onsite					x	Adverse	St – Mt	Slight	Slight
Geology / Hydrogeology	Soil and geology impacts					x	Neutral	St – Mt	Imperceptible	Imperceptible
	Groundwater impacts					x	Neutral	St - Mt	Imperceptible	Imperceptible
Hydrology / Surface water	Surface water quality impacts					x	Adverse	St - Mt	Slight	Imperceptible
	Hydrological impacts					x	Adverse	Mt - Lt	Imperceptible	Imperceptible
	Flood risk impacts					x	Adverse	Mt - Lt	Slight	Imperceptible
Air & climate	Dust emissions					x	Adverse	St – Mt	Slight	Imperceptible
	Odour emissions					x	Adverse	St - Mt	Moderate	Imperceptible
	Climate impacts			x	x	x	Adverse	St – Mt	Imperceptible	Imperceptible
Landscape / Visual	Visual Impact of operations					x	Adverse	St - Mt	Slight	Slight
Cultural Heritage	Construction & post construction impacts					x	Neutral	Pe	-	-
Material Assets	Impacts on material assets					x	Neutral	St - Mt	-	-

Scale		Duration		Significance
I -	International	Tp -	Temporary (<1 yr)	Imperceptible
N -	National	St -	Short term (1-7 yrs)	Slight
R -	Regional	Mt -	Medium term (7-15 yrs)	Moderate
C -	County	Lt -	Long Term (15-60 yrs)	Significant
L -	Local	Pe -	Permanent (60+ yrs)	Profound

Table 6-2: Summary of Cumulative Impacts of the Proposed Development with other developments

Environmental Topic	Cumulative Impact with proposed development with other developments	Significance of Cumulative Impact	Scale of Cumulative Impact	Comment
Human Beings	Landuse, employment, amenity & tourism	Neutral	Localised	Proposed development will generate some increased employment in the locality during the construction and operational phases to augment that which may be provided as part of other development
Traffic	Additional traffic	Slight (negative)	Localised	Proposed development will increase traffic volumes above the existing, potential for additional slight, negative impact in combination with one or more of the identified developments, should haulage routes be the same; however, road network considered to have sufficient capacity
Noise	Additional noise from proposed development during the Construction and Operational phases above the existing	Slight (negative)	Localised	Application of noise limits to be imposed by required facility Industrial Emission licence, as well as heavy industry zoning of the locality, ensure ability to adsorb any cumulative impact
Air Quality	Dust generation during construction and operational phases	Slight (negative)	Localised	Application of dust limits to be imposed by required facility Industrial Emission licence, as well as heavy industry zoning of the locality, ensure ability to adsorb any cumulative impact
	Odour generation during operational phase	Slight (negative)	Localised	Modelling identified no cumulative odour impacts from the proposed development when consider with the 2 no. existing waste management facilities in the wider locality
Flora & Fauna	Impacts on designated areas	Imperceptible	Localised	None of the other identified developments are considered to impact on designated sites in combination with the proposed development
	Impact on flora and fauna	Slight	Localised within development site	Impacts on flora and fauna as a result of the proposed development will be limited to the Pretty Bush site; the other sites are existing industrial sites of no ecological value and are removed from the development location.

Environmental Topic	Cumulative Impact with proposed development with other developments	Significance of Cumulative Impact	Scale of Cumulative Impact	Comment
Soils, Geology and Hydrogeology	Soil and geology impacts	Imperceptible	Localised within development site	There will be limited excavations required as part of the proposed development and no cumulative impacts will occur
	Groundwater impacts	Imperceptible	Localised	Low groundwater table in locality allied to limited excavations will not result in any impacts; lack of interaction with hydrogeology of other development sites ensures no cumulative impact
Hydrology / Surface Water	Hydrological, water quality, and flood risk impacts	Slight	Localised	Mitigation measures included for surface water run-off and attenuation will ensure impacts associated with the proposed development are minimal; separation from other development sites ensures no cumulative impacts
Landscape and Visual	Cumulative visual effect on landscape and visual amenity	Slight	Localised	No significant impacts are envisaged on the landscape and visual amenity of the locality as a result of the proposed development; the nature of the existing landscape ensures the ability to adsorb the proposed development and therefore no cumulative impacts will occur.